Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	3314112	antisense or dsRNA or double (w) stranded (w) RNA	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:54
S2	504	alphavirus adj vector	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:55
S3	495	S1 and S2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:55
S4	1179	ssRNA	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:55
S5	105	S2 and S4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 14:00
S6	54400	antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:55
S7	391	S6 and S2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:56
S8	12916	viral adj particles	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:56
S9	393	S7 andl8	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 13:56
S10	391	antisense and alphavirus adj vector	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 14:01
S11	45	S10 and rnai	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/11 14:04
S12	0	S11	USPAT	OR	ON	2005/03/11 14:05
S13	0	S11	USPAT; DERWENT	OR	ON	2005/03/11 14:05

S14	5644	antisense and viral adj vector	USPAT; DERWENT	OR	ON	2005/03/11 14:05
S15	755	alphavirus	USPAT; DERWENT	OR	ON	2005/03/11 14:05
S16	5644	S14 andl15	USPAT; DERWENT	OR	ON	2005/03/11 14:06
S17	409	antisense and alphavirus	USPAT	OR	ON	2005/03/11 14:11
S18	13	Tuschl.in.	US-PGPUB; USPAT; JPO	OR	ON	2005/03/11 14:15
S19	162	alphavirus and dubensky	US-PGPUB; USPAT; DERWENT	OR	ON	2005/03/11 14:17
S20	110	dubensky.in.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/03/11 14:20
S21	135	dsRNA and alphavirus	US-PGPUB; USPAT; DERWENT	OR	ON	2005/03/11 14:46
S22	18	fire.in.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/03/11 14:47

FILE 'EMBASE' ENTERED AT 12:46:08 ON 13 MAR 2005
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FILE 'BIOSIS' ENTERED AT 12:46:08 ON 13 MAR 2005
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FILE 'MEDLINE' ENTERED AT 12:46:08 ON 13 MAR 2005

FILE 'SCISEARCH' ENTERED AT 12:46:08 ON 13 MAR 2005
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=> s dsrna or double (w)stranded (w) rna
L1 34999 DSRNA OR DOUBLE (W) STRANDED (W) RNA

=> s viral adj vector
L2 0 VIRAL ADJ VECTOR

=> s viral (w) construct or viral (w) vector
L3 9467 VIRAL (W) CONSTRUCT OR VIRAL (W) VECTOR

=> s l1 and l3
L4 63 L1 AND L3

=> s l4 and alphavirus
L5 0 L4 AND ALPHAVIRUS

=> s l4 and inhibit (w) expression (w) cells
L6 0 L4 AND INHIBIT (W) EXPRESSION (W) CELLS

=> s l3 and ssRNA or single (w) stranded (w) rna
L7 156786 L3 AND SSRNA OR SINGLE (W) STRANDED (W) RNA

=> dup rem l4
PROCESSING COMPLETED FOR L4
L8 37 DUP REM L4 (26 DUPLICATES REMOVED)

=> d 1-38 l8 iall

L8 ANSWER 1 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:87146 SCISEARCH
THE GENUINE ARTICLE: 888UE
TITLE: 12th Annual Congress of the European Society of Gene Therapy
AUTHOR: Read M L (Reprint); Spice R; Parker A L; Mir S; Logan A
CORPORATE SOURCE: Univ Birmingham, Div Med Sci, Wolfson Res Labs, Birmingham B15 2TH, W Midlands, England (Reprint)
COUNTRY OF AUTHOR: England
SOURCE: EXPERT OPINION ON BIOLOGICAL THERAPY, (JAN 2005) Vol. 5, No. 1, pp. 137-141.
Publisher: ASHLEY PUBLICATIONS LTD, UNITEC HOUSE, 3RD FL, 2 ALBERT PLACE, FINCHLEY CENTRAL, LONDON N3 1QB, ENGLAND.
ISSN: 1471-2598.
DOCUMENT TYPE: Editorial; Journal
LANGUAGE: English
REFERENCE COUNT: 10
ABSTRACT:

The 2004 European Society of Gene Therapy (ESGT) meeting took place at Tampere Hall in Finland and highlighted advances in a variety of topics, including cancer, zinc-fingers, stem cells, small interfering RNA (siRNA), microRNA, and recent developments of non-viral and **viral**

vectors. This meeting was attended by 513 participants from 32 countries, and included 106 oral and 224 poster presentations. One of the aims of this meeting was to take a critical look at gene therapy and the prospects for the future. Several presentations reported on RNA-based technologies, such as siRNA, as potential new classes of therapeutics against a wide range of diseases and for use in expression libraries to identify functional genes involved in biological phenotypes. Critical assessments were made of other aspects of gene therapy, such as genome editing and the use of protein transduction domains (PTDs) in gene- and protein-based therapies, where many researchers have failed to reproduce initial findings reported in the literature. Safety issues related to **viral vectors** were also important areas of discussion, especially following details released by the UK Gene Therapy Advisory Committee of perhaps the first known case of lentiviral vector-associated oncogenesis. Finally, updates were presented on the clinical development of **viral vectors** in anticancer therapies with evidence of significant improvements in the mean survival of patients.

CATEGORY: BIOTECHNOLOGY & APPLIED MICROBIOLOGY; MEDICINE, RESEARCH & EXPERIMENTAL

SUPPLEMENTARY TERM: **dsRNA**; gene therapy; genome editing; miRNA; protein transduction domains; reducible polycations; RNAi; siRNA; smRNA; vectors

SUPPL. TERM PLUS: SHORT INTERFERING RNAS; CELLS

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
HE L	2004	5	522	NAT REV GENET
JENKE A C W	2004	101	11322	P NATL ACAD SCI USA
KAWASAKI H	2004	431	211	NATURE
KUWABARA T	2004	116	779	CELL
READ M L	2003	13	627	EXPERT OPIN THER PAT
READ M L	2003	7	299	EXPERT OPIN THER TAR
READ M L	2003	5	232	J GENE MED
SCACHERI P C	2004	101	1892	P NATL ACAD SCI USA
[illegible] K	2004	32	936	NUCLEIC ACIDS RES
WADHWA R	2004	567	71	MUTAT RES-REV MUTAT

L8 ANSWER 2 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
DUPLICATE 1

ACCESSION NUMBER: 2004:216766 BIOSIS

DOCUMENT NUMBER: PREV200400218769

TITLE: Identification of a novel internal ribosome entry site in giardiavirus that extends to both sides of the initiation codon.

AUTHOR(S): Garlapati, Srinivas; Wang, Ching C. [Reprint Author]

CORPORATE SOURCE: Department of Pharmaceutical Chemistry, University of California, San Francisco, CA, 94143-2280, USA
ccwang@cgl.ucsf.edu

SOURCE: Journal of Biological Chemistry, (January 30 2004) Vol. 279, No. 5, pp. 3389-3397. print.
CODEN: JBCHA3. ISSN: 0021-9258.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 21 Apr 2004
Last Updated on STN: 21 Apr 2004

ABSTRACT:In Giardia lamblia, enhanced translation of luciferase mRNA, flanked between the 5'-untranslated region (UTR) and 3'-end of giardiavirus transcript, requires the presence of the initial 264-nucleotide (nt) viral capsid-coding region. By introducing the transcripts of dicistronic **viral** ***constructs*** into Giardia, we demonstrated that the 264-nt downstream

region alone is insufficient to function as an internal ribosome entry site (IRES) without including a portion of the 5'-UTR as well. Deletion analysis showed that efficient internal initiation requires the last 253 nts (nts 114-367) of the 5'-UTR in combination with the downstream 264 nts. Specific mutations that disrupted the predicted secondary structural elements in either the 5'-UTR or the 264-nt capsid-coding region completely abolished the IRES-mediated translation of downstream cistron, suggesting that the IRES activity requires the presence of these structures in both regions. Mutations that abolished translation of the first cistron did not, however, affect the IRES-mediated translation of the second cistron, indicating that this IRES-mediated translation is independent of the translation of the upstream cistron. This is, to our knowledge, the first reported identification of a viral IRES with an estimated size of 517 nts that extends to both sides of the initiation site.

CONCEPT CODE: Genetics - General 03502
Genetics - Animal 03506
Biochemistry studies - General 10060
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Enzymes - General and comparative studies: coenzymes 10802
Genetics of bacteria and viruses 31500
Virology - General and methods 33502
Parasitology - General 60502
Invertebrata: comparative, experimental morphology, physiology and pathology - Protozoa 64002

INDEX TERMS: Major Concepts
Biochemistry and Molecular Biophysics; Genetics; Infection; Parasitology

INDEX TERMS: Chemicals & Biochemicals
luciferase; mRNA [messenger RNA]

INDEX TERMS: Miscellaneous Descriptors
internal ribosome entry site

ORGANISM: Classifier
Flagellata 35200
Super Taxa
Protozoa; Invertebrata; Animalia
Organism Name
Giardia lamblia (species): parasite
Taxa Notes
Animals, Invertebrates, Microorganisms, Protozoans

ORGANISM: Classifier
Totiviridae 03404
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
Giardiavirus (genus)
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

REGISTRY NUMBER: 9014-00-0Q (luciferase)
61869-41-8Q (luciferase)
61969-99-1Q (luciferase)
61970-00-1Q (luciferase)
62213-54-1Q (luciferase)
76106-81-5Q (luciferase)

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on STN DUPLICATE 2

ACCESSION NUMBER: 2004277662 EMBASE

TITLE: **Viral vectors** for inducing CD8(+) T cell responses.

AUTHOR: Truckenmiller M.E.; Norbury C.C.
CORPORATE SOURCE: C.C. Norbury, Dept. of Microbiology and Immunology, Pennsylvania State Univ. Coll. Med., Hershey, PA 17033, United States. ccn1@psu.edu
SOURCE: Expert Opinion on Biological Therapy, (2004) 4/6 (861-868).
Refs: 71
ISSN: 1471-2598 CODEN: EOBTA2
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 004 Microbiology
016 Cancer
026 Immunology, Serology and Transplantation
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:
CD8(+) T cells (T(CD8+)) can mediate protective immunity to intracellular pathogens and tumours. Viruses generate strong T(CD8+) responses and, therefore, represent attractive vectors for generating vaccines aimed at producing T(CD8+)-mediated protective immunity. This review will examine the immunological properties of viruses that make them good candidates as vaccine vectors, as well as the manipulations of both vector and antigen that may be required to produce an effective vaccine. The areas addressed include virus infection of dendritic cells in vivo, stimulation of the innate immune response via intracellular and extracellular pattern recognition receptors, the effect of antigenic form on the pathways of antigen presentation and the requirement for elimination of viral genes that target various aspects of the innate and adaptive immune response.

CONTROLLED TERM: Medical Descriptors:
*virus vector
*T lymphocyte
*virus infection
*cancer immunization
antigen presenting cell
antigen presentation
pattern recognition
dendritic cell
immune response
virus gene
virus recombinant
in vivo study
Cytomegalovirus
Herpes simplex virus
Vesicular stomatitis virus
Poxvirus
human
nonhuman
review
Drug Descriptors:
*CD8 antigen: EC, endogenous compound
*cancer vaccine: DV, drug development
*virus vaccine: DV, drug development
major histocompatibility antigen class 1: EC, endogenous compound
toll like receptor: EC, endogenous compound
double stranded RNA: EC, endogenous compound
apoptosis inhibitor: EC, endogenous compound
protein kinase: EC, endogenous compound
CAS REGISTRY NO.: (toll like receptor) 409141-78-2; (protein kinase) 9026-43-1

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ACCESSION NUMBER: 2005017391 EMBASE
TITLE: RNA interference and the use of small interfering RNA to study gene function in mammalian systems.
AUTHOR: Bantounas I.; Phylactou L.A.; Uney J.B.
CORPORATE SOURCE: J.B. Uney, The Henry Wellcome Laboratories, University of Bristol, Dorothy Hodgkin Bldg., Whitson St., Bristol BS1 3NY, United Kingdom. james.uney@bristol.ac.uk
SOURCE: Journal of Molecular Endocrinology, (2004) 33/3 (545-557). Refs: 69
ISSN: 0952-5041 CODEN: JMLEEI
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 022 Human Genetics
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:

In the past 2 years, extraordinary developments in RNA interference (RNAi)-based methodologies have seen small interfering RNAs (siRNA) become the method of choice for researchers wishing to target specific genes for silencing. In this review, an historic overview of the biochemistry of the RNAi pathway is described together with the latest advances in the RNAi field. Particular emphasis is given to strategies by which siRNAs are used to study mammalian gene function. In this regard, the use of plasmid-based and ***viral*** **vector**-based systems to mediate long-term RNAi in vitro and in vivo are described. However, recent work has shown that non-specific silencing effects and activation of the interferon response may occur following the use of some siRNA and delivery vector combinations. Future goals must therefore be to understand the mechanisms by which siRNA delivery leads to unwanted gene silencing effects in cells and, in this way, RNAi technology can reach its tremendous potential as a scientific tool and ultimately be used for therapeutic purposes. .COPYRGT. 2004 Society for Endocrinology.

CONTROLLED TERM: Medical Descriptors:
*RNA interference
*gene function
genetic analysis
mammal
methodology
medical research
gene targeting
gene silencing
biochemistry
plasmid
virus vector
in vitro study
in vivo study
gene technology
RNA cleavage
RNA processing
sequence homology
Arabidopsis
Dictyostelium
Caenorhabditis elegans
gene expression
inhibition kinetics
adenovirus vector
retrovirus vector
cell type
human

nonhuman
review
priority journal
Drug Descriptors:
*small interfering RNA
interferon
double stranded RNA
ribonuclease
RNA induced silencing complex
short hairpin RNA
microRNA

CAS REGISTRY NO.: (ribonuclease) 59794-03-5, 9001-99-4

L8 ANSWER 5 OF 37 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2004466787 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 15377229
TITLE: VIGS VECTORS FOR GENE SILENCING: Many Targets, Many Tools.
AUTHOR: Robertson Dominique
CORPORATE SOURCE: Departments of Botany and Genetics, North Carolina State University, Raleigh, North Carolina 27695-7612; email:. Niki Robertson@ncsu.edu
SOURCE: Annual review of plant biology, (2004) 55 495-519. Journal code: 101140127. ISSN: 1543-5008.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20040921
Last Updated on STN: 20041219

ABSTRACT:
The discovery that plants recognize and degrade invading viral RNA caused a paradigm shift in our understanding of viral/host interactions. Combined with the discovery that plants cosuppress their own genes if they are transformed with homologous transgenes, new models for both plant intercellular communication and viral defense have emerged. Plant biologists adapted homology-based defense mechanisms triggered by incoming viruses to target individual genes for silencing in a process called virus-induced gene silencing (VIGS). Both VIGS- and **dsRNA**-containing transformation cassettes are increasingly being used for reverse genetics as part of an integrated approach to determining gene function. Virus-derived vectors silence gene expression without transformation and selection. However, because viruses also alter gene expression in their host, the process of VIGS must be understood. This review examines how DNA and RNA viruses have been modified to silence plant gene expression. I discuss advantages and disadvantages of VIGS in determining gene function and guidelines for the safe use of **viral vectors**.

L8 ANSWER 6 OF 37 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN DUPLICATE 4
ACCESSION NUMBER: 2004426882 EMBASE
TITLE: The ins and outs of RNAi in mammalian cells.
AUTHOR: Banan M.; Puri N.
CORPORATE SOURCE: N. Puri, Ambion Inc., 2130 Woodward Street, Austin, TX 78744-1832, United States. npuri@ambion.com
SOURCE: Current Pharmaceutical Biotechnology, (2004) 5/5 (441-450). Refs: 101
ISSN: 1389-2010 CODEN: CPBUBP
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 004 Microbiology
022 Human Genetics
030 Pharmacology

037 Drug Literature Index
039 Pharmacy

LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT:
The ability to utilize the RNA interference (RNAi) machinery for silencing target-gene expression has created a lot of excitement in the research community. RNAi in mammalian cells is achieved through introduction or expression of 21-23 bp small interfering RNAs (siRNAs) in cells or animals. Currently, there are six ways of producing siRNAs. siRNAs can be produced by chemical synthesis, in vitro transcription, or RNase III/Dicer digestion of long **dsRNAs**. Alternatively, they can be expressed in vivo from plasmids, PCR cassettes, or **viral vectors** that include a CMV or polymerase III (pol III) transcription unit. So far, these approaches have been used to create siRNAs for use in loss-of-function studies. However, it is clear that siRNAs also hold great promise as therapeutic tools. First, their activity seems to be very sequence-specific. Moreover, siRNAs could be modified in order to increase their stability and potency in vivo. Here, we will review the issues and findings related to siRNA design and production. Moreover, we will summarize new findings on siRNA specificity, modification, and delivery, which are critical to their use as therapeutic agents. .COPYRGT. 2004 Bentham Science Publishers Ltd.

CONTROLLED TERM: Medical Descriptors:
*RNA interference
*mammal cell
gene silencing
gene targeting
gene expression
genetics
RNA synthesis
in vitro study
genetic transcription
in vivo study
plasmid vector
polymerase chain reaction
virus vector
Cytomegalovirus
RNA sequence
protein modification
genetic stability
gene delivery system
drug potency
drug design
drug specificity
drug mechanism
antiviral activity
gene expression regulation
chromatin condensation
transposon
gene rearrangement
retrovirus vector
adenovirus vector
infection prevention
Human immunodeficiency virus infection: PC, prevention
hepatitis C: PC, prevention
influenza: PC, prevention
nonhuman
review
Drug Descriptors:
*small interfering RNA: EC, endogenous compound
*small interfering RNA: PR, pharmaceutics

*small interfering RNA: PD, pharmacology
ribonuclease III: EC, endogenous compound
RNA polymerase
CAS REGISTRY NO.: (ribonuclease III) 9073-62-5; (RNA polymerase) 9014-24-8

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on STN DUPLICATE 5
ACCESSION NUMBER: 2004372572 EMBASE
TITLE: RNA-based drugs: From RNA interference to short interfering RNAs.
AUTHOR: Poliseno L.; Mercatanti A.; Citti L.; Rainaldi G.
CORPORATE SOURCE: G. Rainaldi, Lab. di Terapia Genica e Molecolare, Istituto di Fisiologia Clinica, Area della Ricerca del CNR, Via G. Moruzzi 1, 56100 Pisa, Italy. g.rainaldi@ifc.cnr.it
SOURCE: Current Pharmaceutical Biotechnology, (2004) 5/4 (361-368).
Refs: 114
ISSN: 1389-2010 CODEN: CPBUBP
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 004 Microbiology
005 General Pathology and Pathological Anatomy
016 Cancer
022 Human Genetics
037 Drug Literature Index
039 Pharmacy
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:
RNA interference consists of a sequence specific post-transcriptional gene silencing phenomenon triggered by a double strand RNA molecule homologous to the silenced gene. The **dsRNA** is cleaved by DICER enzyme in small ***dsRNA*** pieces, named short interfering RNAs (siRNAs). These fragments are thereafter associated to RISC complex where the cleavage of target RNA occurs. The observation that siRNAs can trigger the RNA interference mechanism in mammalian cells represents a fundamental discovery that discloses new horizons in genetic researches in that theoretically each gene can be silenced. The relative simplicity by which active short interfering RNAs can be designed and synthesized explains their widespread use in basic and applied researches, even if appropriate controls that exclude off-target effects are strictly required. The findings that siRNAs are active even when expressed in ***viral*** **vectors** open the possibility that they can be very soon used for gene therapy of several human diseases. .COPYRGT. 2004 Bentham Science Publishers Ltd.

CONTROLLED TERM: Medical Descriptors:
RNA interference
RNA sequence
posttranscriptional gene silencing
sequence homology
RNA cleavage
protein targeting
mammal cell
genetic analysis
theory
gene silencing
drug design
drug synthesis
drug research
gene expression
virus vector
gene therapy
molecular mechanics

gene function
Human immunodeficiency virus infection: DT, drug therapy
Human immunodeficiency virus infection: ET, etiology
drug targeting
Human immunodeficiency virus
malignant neoplastic disease: DT, drug therapy
practice guideline
drug screening
retrovirus vector
lentivirus vector
adenovirus vector
viral gene delivery system
human
review
Drug Descriptors:
*small interfering RNA: DV, drug development
*small interfering RNA: DT, drug therapy
*small interfering RNA: PR, pharmaceutics
double stranded RNA: EC, endogenous compound
ribonuclease III: EC, endogenous compound
RNA induced silencing complex: EC, endogenous compound
antisense oligonucleotide: DV, drug development
antisense oligonucleotide: PR, pharmaceutics
ribozyme: DV, drug development
ribozyme: PR, pharmaceutics
Nef protein: EC, endogenous compound
Rev protein: EC, endogenous compound
transactivator protein: EC, endogenous compound
Vif protein: EC, endogenous compound
Gag protein: EC, endogenous compound
CD4 antigen: EC, endogenous compound
chemokine receptor CCR5: EC, endogenous compound
chemokine receptor CXCR4: EC, endogenous compound
RNA polymerase
CAS REGISTRY NO.: (ribonuclease III) 9073-62-5; (Rev protein) 111804-97-8, 127004-89-1; (chemokine receptor CXCR4) 188900-71-2; (RNA polymerase) 9014-24-8

L8 ANSWER 8 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:918299 SCISEARCH
THE GENUINE ARTICLE: 859XX
TITLE: In vivo transfer and expression of genes coding for short interfering RNAs
AUTHOR: Zentilin L (Reprint); Giacca M
CORPORATE SOURCE: Int Ctr Genet Engn & Biotechnol, Mol Med Lab, Padriciano 99, I-34012 Trieste, Italy (Reprint); Int Ctr Genet Engn & Biotechnol, Mol Med Lab, I-34012 Trieste, Italy; Scuola Normale Super Pisa, Pisa, Italy
COUNTRY OF AUTHOR: Italy
SOURCE: CURRENT PHARMACEUTICAL BIOTECHNOLOGY, (AUG 2004) Vol. 5, No. 4, pp. 341-347.
Publisher: BENTHAM SCIENCE PUBL LTD, EXECUTIVE STE Y26, PO BOX 7917, SAIF ZONE, 1200 BR SHARJAH, U ARAB EMIRATES.
ISSN: 1389-2010.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 56
ABSTRACT:
RNA interference can induce potent gene silencing through degradation of complementary mRNA. Short double-stranded interfering RNAs are incorporated into an RNA-induced silencing complex that mediates the recognition and

degradation of messenger RNAs in a very targeted manner. Though this phenomenon has been described in mammalian cells only a few years ago, there has been an explosion of interest in using small interfering RNAs to efficiently knockdown genes. Consequently, much effort has been put into the development of systems that allow chip and efficient delivery of these molecules into mammalian cells in vitro and in vivo. To overcome the transient inhibitory effects of transfected RNA molecule synthesis in vitro, expression plasmids, mostly based on RNA polymerase III promoters, have been designed to achieve long-term or stable inhibition of the target genes. Moreover, these expression cassettes have been incorporated into **viral vectors** to obtain gene silencing also in primary cells refractory to plasmid transfection, and to target specific genes in vivo in animal models. The rapid progression in the field of RNA interference has revolutionized the manner in which gene function is studied and, notably, pharmaceutical companies are already validating this technology for medical applications in the near future.

CATEGORY: BIOCHEMISTRY & MOLECULAR BIOLOGY; PHARMACOLOGY & PHARMACY
SUPPL. TERM PLUS: EMBRYONIC STEM-CELLS; **DOUBLE-STRANDED-RNA**; MAMMALIAN-CELLS; LENTIVIRAL VECTORS; STABLE SUPPRESSION; HIV-1 INFECTION; HAIRPIN RNAS; C-ELEGANS; INHIBITION; DELIVERY

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
ABBASTERKI T	2002	13	2197	HUM GENE THER
AN D S	2003	14	1207	HUM GENE THER
BARTON G M	2002	99	14943	P NATL ACAD SCI USA
BODEN D	2003	31	5033	NUCLEIC ACIDS RES
BRUMMELKAMP T R	2002	2	243	CANCER CELL
BRUMMELKAMP T R	2002	296	550	SCIENCE
CAPLEN N J	2001	98	9742	P NATL ACAD SCI USA
CZAUDERNA F	2003	31	670	NUCLEIC ACIDS RES
DEVROE E	2002	2	15	BMC BIOTECHNOL
DING H L	2003	2	209	AGING CELL
ELBASHIR S M	2001	411	494	NATURE
ELBASHIR S M	2001	20	6877	EMBO J
ELBASHIR S M	2002	26	199	METHODS
FIRE A	1998	391	806	NATURE
GE Q	2003	100	2718	P NATL ACAD SCI USA
GITLIN L	2002	418	430	NATURE
GRISHOK A	2001	106	23	CELL
HANNON G J	2002	418	244	NATURE
HUTVAGNER G	2001	293	834	SCIENCE
JACQUE J M	2002	418	435	NATURE
KAWASAKI H	2003	31	700	NUCLEIC ACIDS RES
KETTING R F	2001	15	2654	GENE DEV
LEE N S	2002	20	500	NAT BIOTECHNOL
LI M J	2003	8	196	MOL THER
LUND A H	1996	3	365	J BIOMED SCI
MA Y	2003	21	111	STEM CELLS
MANNO C S	2003	101	2963	BLOOD
MATSUKURA S	2003	31	e77	NUCLEIC ACIDS RES
MCMANUS M T	2002	3	737	NAT REV GENET
MEDINA M F C	1999	1	580	CURR OPIN MOL THER
MILLER V M	2003	100	7195	P NATL ACAD SCI USA
MIYAGISHI M	2002	20	497	NAT BIOTECHNOL
PADDISON P J	2002	99	1443	P NATL ACAD SCI USA
PADDISON P J	2002	16	948	GENE DEV
PAULE M R	2000	28	1283	NUCLEIC ACIDS RES
PAUL C P	2002	20	505	NAT BIOTECHNOL
PFEIFER A	2002	99	2140	P NATL ACAD SCI USA

QIN X F	2003	100	183	P NATL ACAD SCI USA
RUBINSON D A	2003	33	401	NAT GENET
SCHERR M	2003	101	1566	BLOOD
SHARP P A	2001	15	485	GENE DEV
SHEN C X	2003	539	111	FEBS LETT
SHI Y	2003	19	9	TRENDS GENET
SHINAGAWA T	2003	17	1340	GENE DEV
SONG E W	2003	9	347	NAT MED
STARK G R	1998	67	227	ANNU REV BIOCHEM
SUI G C	2002	99	5515	P NATL ACAD SCI USA
TISCORNIA G	2003	100	1844	P NATL ACAD SCI USA
TOMAR R S	2003	22	5712	ONCOGENE
TUSCHL T	1999	13	3191	GENE DEV
VANDEWETERING M	2003	4	609	EMBO REP
WOHLBOLD L	2003	102	2236	BLOOD
XIA H B	2002	20	1006	NAT BIOTECHNOL
YU J Y	2002	99	6047	P NATL ACAD SCI USA
ZENG Y	2002	8	855	RNA
ZENTILIN L	2000	7	153	GENE THER

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ACCESSION NUMBER: 2004289983 EMBASE
TITLE: Genetically targeted cancer therapy: Tumor destruction by PKR activation.
AUTHOR: Vorburger S.A.; Pataer A.; Swisher S.G.; Hunt K.K.
CORPORATE SOURCE: Dr. K.K. Hunt, Unit 444 of Surgical Oncology, Univ. TX M. D. Anderson Cancer Ctr., 1515 Holcombe Boulevard, Houston, TX 77030, United States. khunt@mdanderson.org
SOURCE: American Journal of PharmacoGenomics, (2004) 4/3 (189-198). Refs: 120
ISSN: 1175-2203 CODEN: AJPMC8
COUNTRY: New Zealand
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 016 Cancer
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:

The is a **double-stranded RNA**-activated protein kinase (PKR) has been largely investigated for its key role in viral host defense. Although best characterized by its function in mediating the antiviral and antiproliferative effects of interferon (IFN), PKR is also implicated in transcriptional regulation, cell differentiation, signal transduction, and tumor suppression. However, recent findings identifying PKR as an important effector of apoptosis have led to an increased interest in PKR modulation as an antitumor strategy. PKR can either be up-regulated through direct induction by the transcription factor E2F-1, or it can be activated through direct protein-protein interactions with the melanoma differentiation-associated gene-7 (MDA7, IL-24). Additionally, the intracellular formation of ***double*** **-stranded RNA** by transfection with antisense RNA complementary to tumor-specific RNA sequences can induce PKR activation and apoptosis selective to these tumor cells. The growing application of ***viral*** **vector**-based gene therapies and oncolytic, replicating viruses that must elude viral defense in order to be effective, has also drawn attention to PKR. Oncolytic viruses, like the attenuated herpes simplex virus R3616, the vesicular stomatitis virus, or reovirus, specifically replicate in tumor cells only because the viral host defense in the permissive cells is suppressed. In this article we review the role of PKR as an effector of apoptosis and a target for tumor treatment strategies and discuss the potential of PKR-modifying agents to treat patients with cancer. Targeted gene therapy against cancer can be approached by activation of PKR with the down-regulation

of protein synthesis and induction of apoptosis, or by suppression of PKR with the propagation of oncolytic virus. Since the PKR pathway can be modified by many routes, antitumor therapies combining oncolytic virus, gene therapies, and chemotherapy with PKR modifiers are likely to emerge in the near future as therapeutic options in the treatment of patients with cancer.

CONTROLLED TERM: Medical Descriptors:
*cancer therapy
*cancer genetics
*enzyme activation
apoptosis
gene therapy
gene overexpression
immunogenicity
host resistance
enzyme repression
enzyme inhibition
transcription regulation
cell differentiation
signal transduction
enzyme induction
genetic transfection
cancer inhibition
viral gene therapy
virus replication
Herpes simplex virus
Vesicular stomatitis virus
Reovirus
protein protein interaction
cancer chemotherapy
human
review
priority journal
Drug Descriptors:
*protein kinase: EC, endogenous compound
***double stranded rna activated protein kinase: EC, endogenous compound**
interleukin 24: EC, endogenous compound
transcription factor E2F1: EC, endogenous compound
DNA vaccine
heat shock protein 70: EC, endogenous compound
heat shock protein 90: EC, endogenous compound
double stranded RNA
interferon
unclassified drug
CAS REGISTRY NO.: (protein kinase) 9026-43-1

L8 ANSWER 10 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:981549 SCISEARCH
THE GENUINE ARTICLE: 738NG
TITLE: Inhibition of human immunodeficiency virus type 1 replication in primary macrophages by using Tat- or CCR5-specific small interfering RNAs expressed from a lentivirus vector
AUTHOR: Lee M T M; Coburn G A; McClure M O; Cullen B R (Reprint)
CORPORATE SOURCE: Duke Univ, Med Ctr, Howard Hughes Med Inst, Box 3025, Durham, NC 27710 USA (Reprint); Duke Univ, Med Ctr, Howard Hughes Med Inst, Durham, NC 27710 USA; Duke Univ, Med Ctr, Dept Mol Genet & Microbiol, Durham, NC 27710 USA; Univ London Imperial Coll Sci Technol & Med, Sch Med, Wright Fleming Inst, Jefferiss Res Trust Labs, London W2 1PG,

England
COUNTRY OF AUTHOR: USA; England
SOURCE: JOURNAL OF VIROLOGY, (NOV 2003) Vol. 77, No. 22, pp. 11964-11972.
Publisher: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904 USA.
ISSN: 0022-538X.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 51
ABSTRACT:
Although several groups have demonstrated that RNA interference, induced by transfection of small interfering RNA (siRNA) duplexes, can protect cells against a viral challenge in culture, this protection is transient. Here, we describe lentivirus expression vectors that can stably express siRNAs at levels sufficient to block virus replication. We have used these vectors to stably express siRNAs specific for the essential human immuno-deficiency virus type 1 (HIV-1) Tat transcription factor or specific for a cellular coreceptor, CCR5, that is required for infection by the majority of primary HIV-1 isolates. These lentivirus vectors are shown to protect cells, including primary macrophages, against HIV-1 infection in culture by inducing selective degradation of their target mRNA species. These data suggest that it should be possible to block the expression of specific viral or cellular genes in vivo by using **viral ***vectors*** to stably express the appropriate siRNAs.

CATEGORY: VIROLOGY
SUPPL. TERM PLUS: **DOUBLE-STRANDED-RNA**; HIV-1 INFECTION; MAMMALIAN-CELLS; NONDIVIDING CELLS; GENE-EXPRESSION; MATRIX PROTEIN; C-ELEGANS; TRANSCRIPTION; PATHOGENESIS; DROSOPHILA

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
ADAMS S E	1988	16	4287	NUCLEIC ACIDS RES
BITKO V	2001	1	34	BMC MICROBIOL
BRÜMMELKAMP T R	2002	296	550	SCIENCE
BUKRINSKY M I	1993	365	666	NATURE
COBURN G A	2002	76	9225	J VIROL
CONNOR R I	1995	206	935	VIROLOGY
COVEY S N	1997	385	781	NATURE
ELBASHIR S M	2001	411	494	NATURE
FIRE A	1998	391	806	NATURE
FOUCHIER R A M	1997	16	4531	EMBO J
GE Q	2003	100	2718	P NATL ACAD SCI USA
GITLIN L	2002	418	430	NATURE
HAMMOND S M	2000	404	293	NATURE
HANNON G J	2002	418	244	NATURE
HU W Y	2002	12	1301	CURR BIOL
HUTVAGNER G	2002	12	225	CURR OPIN GENET DEV
HUTVAGNER G	2001	293	834	SCIENCE
JACQUE J M	2002	418	435	NATURE
KAPADIA S B	2003	100	2014	P NATL ACAD SCI USA
KETTING R F	1999	99	133	CELL
KETTING R F	2001	15	2654	GENE DEV
KNIGHT S W	2001	293	2269	SCIENCE
LEE N S	2002	20	500	NAT BIOTECHNOL
LEWIS P	1992	11	3053	EMBO J
LIU R	1996	86	367	CELL
MALIM M H	1988	335	181	NATURE
MANCHE L	1992	12	5238	MOL CELL BIOL
MARTINEZ J	2002	110	563	CELL

MARTINEZ M A	2002	16	2385	AIDS
MCMANUS M T	2002	3	737	NAT REV GENET
MYSLINSKI E	2001	29	2502	NUCLEIC ACIDS RES
NALDINI L	2000	55	599	ADV VIRUS RES
NOVINA C D	2002	8	681	NAT MED
PADDISON P J	2002	16	948	GENE DEV
QIN X F	2003	100	183	P NATL ACAD SCI USA
RANDALL G	2003	100	235	P NATL ACAD SCI USA
RATCLIFF F	1997	276	1558	SCIENCE
ROSS T M	1999	52	233	ADV VIRUS RES
RUBINSON D A	2003	33	401	NAT GENET
SCHWARZ D S	2002	10	537	MOL CELL
SHLOMAI A	2003	37	764	HEPATOLOGY
STEWART S A	2003	9	493	RNA
SUI G C	2002	99	5515	P NATL ACAD SCI USA
SURABHI R M	2002	76	12963	J VIROL
TABARA H	1999	99	123	CELL
TILEY L S	1990	178	560	VIROLOGY
TISCORNIA G	2003	100	1844	P NATL ACAD SCI USA
TOKUNAGA K	2001	75	6776	J VIROL
WEINBERG J B	1991	174	1477	J EXP MED
WILSON J A	2003	100	2783	P NATL ACAD SCI USA
ZENG Y	2002	9	1327	MOL CELL

L8 ANSWER 11 OF 37 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 2003509735 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14585643
TITLE: Small RNA: can RNA interference be exploited for therapy?.
AUTHOR: Wall Nathan R; Shi Yang
CORPORATE SOURCE: Department of Pathology, Harvard Medical School, Boston, MA 02115, USA.
CONTRACT NUMBER: F32 CA097802 (NCI)
R01GM53874 (NIGMS)
SOURCE: Lancet, (2003 Oct 25) 362 (9393) 1401-3. Ref: 39
Journal code: 2985213R. ISSN: 1474-547X.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200401
ENTRY DATE: Entered STN: 20031031
Last Updated on STN: 20040113
Entered Medline: 20040112

ABSTRACT:
CONTEXT: RNA interference (RNAi) is the sequence-specific gene-silencing induced by **double-stranded RNA (dsRNA)**, and gives information about gene function quickly, easily, and inexpensively. The use of RNAi for genetic-based therapies is widely studied, especially in viral infections, cancers, and inherited genetic disorders. RNAi has been used to make tissue-specific knockdown mice for studying gene function in a whole animal. Combined with genomics data, RNAi-directed gene-silencing could allow functional determination of any gene expressed in a cell or pathway. The term RNAi came from the discovery that the injection of **dsRNAs** into Caenorhabditis elegans interferes with the expression of specific genes containing a complementary region to the delivered **dsRNA**. Although stalled for a time by the non-gene-specific interferon response elicited by ***dsRNA*** molecules longer than about 30 nucleotides in mammalian cells, Tom Tuschl's group found that transfection of synthetic 21-nucleotide small-interfering RNA (siRNA) duplexes were highly selective and sequence-specific inhibitors of endogenous genes. STARTING POINT: siRNA

expression has been studied with siRNA from plasmid and **viral** ***vectors*** that efficiently deliver siRNAs into both dividing and non-dividing cells, stem cells, zygotes, and their differentiated progeny. A collection of RNA interference vectors that suppress 50 human de-ubiquitinating enzymes allowed Thijn Brummelkamp and colleagues to study this gene family and to identify de-ubiquitinating enzymes in cancer-relevant pathways (Nature 2003; 424: 797-801). These researchers found that the familial cylindromatosis tumour suppressor gene (CYLD), previously of unknown function, could enhance the activation of the transcription factor NF-kappaB, leading to increased resistance to apoptosis. They have now started to investigate the use of CYLD inhibitors in clinical trials. WHERE NEXT: The ability to efficiently and stably produce and deliver sufficient amounts of siRNA to the proper target tissues require refinement before this new technology can be tried clinically. Initial in-vivo studies reported effective transgene suppression in adult mice by chemically synthesised siRNAs. More recently many researchers have used plasmid and **viral vectors** for transcription of short-hairpin RNAs, both in vitro and in vivo. With these expression systems, gene expression was more stably inhibited than with the transient knockdown recorded with chemically synthesised siRNA. Human trials exploiting these latest findings are likely to soon follow.

CONTROLLED TERM: Animals
Apoptosis: PH, physiology
Forecasting
Gene Expression Regulation: PH, physiology
*Gene Silencing: PH, physiology
*Gene Therapy: MT, methods
Gene Therapy: TD, trends
Genes, Tumor Suppressor: PH, physiology
Humans
Mice
*RNA Interference: PH, physiology
*RNA, Double-Stranded: PH, physiology
Research Support, U.S. Gov't, P.H.S.
Tumor Suppressor Proteins: PH, physiology

CHEMICAL NAME: 0 (CYLD protein, human); 0 (RNA, Double-Stranded); 0 (Tumor Suppressor Proteins)

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ACCESSION NUMBER: 2003501612 EMBASE
TITLE: RNA Interference in Biology and Medicine.
AUTHOR: Milhavet O.; Gary D.S.; Mattson M.P.
CORPORATE SOURCE: M.P. Mattson, Laboratory of Neurosciences, National Institute on Aging, Gerontology Research Center, 5600 Nathan Shock Drive, Baltimore, MD 21224, United States.
mattsonm@grc.nia.nih.gov
SOURCE: Pharmacological Reviews, (2003) 55/4 (629-648).
Refs: 176
ISSN: 0031-6997 CODEN: PAREAQ
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 004 Microbiology
016 Cancer
018 Cardiovascular Diseases and Cardiovascular Surgery
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:
First discovered in plants the nematode Caenorhabditis elegans, the production of small interfering RNAs (siRNAs) that bind to and induce the degradation of specific endogenous mRNAs is now recognized as a mechanism that is widely

employed by eukaryotic cells to inhibit protein production at a posttranscriptional level. The endogenous siRNAs are typically 19- to 23-base ***double*** **-stranded RNA** oligonucleotides, produced from much larger RNAs that upon binding to target mRNAs recruit RNases to a protein complex that degrades the targeted mRNA. Methods for expressing siRNAs in cells in culture and in vivo using **viral vectors**, and for transfecting cells with synthetic siRNAs, have been developed and are being used to establish the functions of specific proteins in various cell types and organisms. RNA interference methods provide several major advantages over prior methods (antisense DNA or antibody-based techniques) for suppressing gene expression. Recent preclinical studies suggest that RNA interference technology holds promise for the treatment of various diseases. Pharmacologists have long dreamed of the ability to selectively antagonize or eliminate the function of individual proteins-RNAi technology may eventually make that dream a reality.

CONTROLLED TERM: Medical Descriptors:
*RNA interference
*RNA transcription
*gene silencing
genetic transcription
signal transduction
cell cycle
cell motility
cell death
transcription regulation
genetic transfection
virus vector
virus replication
cancer therapy
Human immunodeficiency virus infection
cardiovascular disease
cerebrovascular disease
Alzheimer disease
Parkinson disease
Huntington chorea
amyotrophic lateral sclerosis
neurologic disease
degenerative disease
autoimmune disease
inflammation
oxidative stress
nerve cell culture
human
nonhuman
mouse
rat
controlled study
human cell
animal cell
review
priority journal
Drug Descriptors:
*small interfering rna
*RNA
messenger RNA
double stranded RNA
complementary DNA
unclassified drug

CAS REGISTRY NO.: (RNA) 63231-63-0

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ACCESSION NUMBER: 2003:446905 SCISEARCH
THE GENUINE ARTICLE: 681FD
TITLE: RNA-based therapeutic strategies for cancer
AUTHOR: Read M I (Reprint); Stevenson M; Farrow P J; Barrett L B; Seymour L W
CORPORATE SOURCE: Univ Oxford, Radcliffe Infirm, Dept Clin Pharmacol, Woodstock Rd, Oxford OX2 6HE, England (Reprint); Univ Oxford, Radcliffe Infirm, Dept Clin Pharmacol, Oxford OX2 6HE, England
COUNTRY OF AUTHOR: England
SOURCE: EXPERT OPINION ON THERAPEUTIC PATENTS, (MAY 2003) Vol. 13, No. 5, pp. 627-638.
Publisher: ASHLEY PUBLICATIONS LTD, UNITEC HOUSE, 3RD FL, 2 ALBERT PLACE, FINCHLEY CENTRAL, LONDON N3 1QB, ENGLAND.
ISSN: 1354-3776.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 120
ABSTRACT:
Recent progress in the field of RNA therapeutics has highlighted the potential of using RNA-based strategies for the treatment of human cancer. Emerging technologies such as small interfering RNA (siRNA) to trigger RNA interference (RNAi) and catalytic RNA molecules, called ribozymes, are being developed to modulate expression of genes to either block tumourigenesis itself, inhibit tumour growth or prevent metastasis. Delivery of mRNA or vectors based on positive-strand RNA viruses such as alpha viruses, picornaviruses and flaviviruses have also found applications in the development of cancer vaccines and for apoptosis of tumour cells. These approaches should help overcome some of the drawbacks of **viral vectors** used in the majority (similar to 60%) of clinical trials for cancer gene therapy, including potential malignant transformation due to insertional mutagenesis with retroviral delivery and preexisting immune responses to adenoviral proteins. In this review, the advantages and disadvantages of RNA-based therapeutic strategies and their potential use in cancer treatments will be compared.

CATEGORY: MEDICINE, LEGAL; PHARMACOLOGY & PHARMACY
SUPPLEMENTARY TERM: alpha virus; cancer; delivery; **double stranded RNA (dsRNA)**; flavivirus; gene therapy; Kunjin; mRNA; picornaviruses; poliovirus; replicon; ribozymes; RNA interference (RNAi); Semliki Forest virus; Sindbis virus; small interfering RNA (siRNA); tumour
SUPPL. TERM PLUS: FGF-BINDING PROTEIN; **DOUBLE-STRANDED-RNA**; ANTIANGIOGENIC RIBOZYME ANGIOZYME(TM); MEDIATED DOWN-REGULATION; RECEPTOR MESSENGER-RNA; GENE-THERAPY; IN-VIVO; MULTIDRUG-RESISTANCE; BREAST-CANCER; INHIBITS PROLIFERATION

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
GANSBACHER B	2003	5	82	J GENE MED
AGAPOV E V	1998	95	12989	P NATL ACAD SCI USA
AIGNER A	2001	92	510	INT J CANCER
AIGNER A	2002	21	5733	ONCOGENE
AIGNER A	2002	9	1700	GENE THER
ALEMANY R	2000	81	2605	J GEN VIROL 11
ANRAKU I	2002	76	3791	J VIROL
AOKI Y	2003	30	96	CLIN EXP PHARMACOL P
BEGER C	2001	98	130	P NATL ACAD SCI USA
BERGLUND P	1999	17	497	VACCINE

BETTINGER T	2001	3	116	CURR OPIN MOL THER
BETTINGER T	2001	29	3882	NUCLEIC ACIDS RES
BUCKLEY R H	2002	360	1185	LANCET
CAI L	1999	132	85	TOXICOLOGY
CHECK E	2003	421	305	NATURE
CHENG W F	2002	13	553	HUM GENE THER
CIOCA D P	2003	10	125	CANCER GENE THER
COLMENERO P	2002	98	554	INT J CANCER
CZUBAYKO F	1997	3	1137	NAT MED
DAEMEN T	2002	9	85	GENE THER
ELBASHIR S M	2001	20	6877	EMBO J
ELBASHIR S M	2001	411	494	NATURE
FIRE A	1998	391	806	NATURE
FISHER K D	2001	8	341	GENE THER
FROLOV I	1999	73	3854	J VIROL
GIL J	2000	5	107	APOPTOSIS
GILBOA E	1998	46	82	CANCER IMMUNOL IMMUN
GROMEIER M	2000	97	6803	P NATL ACAD SCI USA
HACKETT N R	2000	2	376	CURR OPIN MOL THER
HALE S J	2002	12	369	EXPERT OPIN THER PAT
HANNON G J	2002	418	244	NATURE
HATANAKA H	2001	21	879	ANTICANCER RES
HEISER A	2002	109	409	J CLIN INVEST
HEISER A	2001	166	2953	J IMMUNOL
HYNES N E	1994	1198	165	BIOCHIM BIOPHYS ACTA
IIDA T	2001	8	803	CANCER GENE THER
JARDINES L	1993	61	268	PATHOBIOLOGY
KASHANISABET M	2002	7	76	J INVEST DERM SYMP P
KASHANISABET M	2002	99	3878	P NATL ACAD SCI USA
KHAZAIE K	1993	12	255	CANCER METAST REV
KHROMYKH A A	2000	2	555	CURR OPIN MOL THER
KHROMYKH A A	1997	71	1497	J VIROL
KONDO Y	1995	55	2021	CANCER RES
KRAUS M H	1989	86	9193	P NATL ACAD SCI USA
LAVROVSKY Y	1999	13	925	MOL ENDOCRINOL
LEWIS D L	2002	32	107	NAT GENET
LUNDSTROM K	2002	4	28	CURR OPIN MOL THER
MARCUCCI G	2003	101	425	BLOOD
MARTIGNONE S	1993	85	398	J NATL CANCER I
NAGATA J	2001	286	406	BIOCHEM BIOPH RES CO
PAHL H L	1999	18	6853	ONCOGENE
PARKS G D	2002	293	192	VIROLOGY
PAVCO P A	2000	6	2094	CLIN CANCER RES
PLOWMAN G D	1993	90	1746	P NATL ACAD SCI USA
READ M L	2003	7	299	EXPERT OPIN THER TAR
READ M L	2002	12	379	EXPERT OPIN THER PAT
READ M L	2003	5	232	J GENE MED
ROTHER R P	1995	182	1345	J EXP MED
RUSSELL D W	1995	6	635	HUM GENE THER
SANDBERG J A	2000	40	1462	J CLIN PHARMACOL 2
SANDBERG J A	2000	10	153	ANTISENSE NUCLEIC A
SANDBERG J A	1999	9	271	ANTISENSE NUCLEIC A
SANJUAN X	1996	179	376	J PATHOL
SCHECHTER A L	1984	312	513	NATURE
SOHN R L	2001	9	287	WOUND REPAIR REGEN
SONG E W	2003	9	347	NAT MED
TANG C K	1999	59	5315	CANCER RES
TEKUR S	2002	33	44	MOL CARCINOGEN
THOMPSON M E	1995	9	444	NAT GENET
TOURRIERE H	2002	84	821	BIOCHIMIE
TSENG J C	2002	94	1790	J NATL CANCER I
TUSCHL T	1999	13	3191	GENE DEV

USMAN N	2000	106	1197	J CLIN INVEST
VANDENBRULE F A	1996	32	1598	EUR J CANCER A
VELDERS M P	2001	61	7861	CANCER RES
WANG C Y	1999	5	412	NAT MED
WENG D E	2001	3	141	CURR ONCOL REP
WILDA M	2002	21	5716	ONCOGENE
YING H	1999	5	823	NAT MED
YOSHIKAWA K	1999	5	1249	CLIN CANCER RES
ZAMORE P D	2000	101	25	CELL

STN Patent No. (RPN)	Year (RPY)	Ref. Inventor/Assignee (RIN)	Type	Ref. Patent No. (RPN)
US 001066	2001	CEAYIRLI C		US 001066
0011201	2000	DROPULIC B		0011201
US 003469	2003	MCSWIGGEN J		US 003469
0074485	2000	LAVROVSKY Y		0074485
0074722	2000	FISHER K D		0074722
0116343	2001	JOHNSTON R E		0116343
0132898	2001	ALTON E W F		0132898
0157061	2001	DEBS R J		0157061
0170982	2001	BEGER C		0170982
02081628	2002	BLATT L		02081628
02097114	2002	MCSWIGGEN J		02097114
02096927	2002	SANDBERG J		02096927
02055692	2002	LIMMER S		02055692
02094185	2002	KARPEISKY A		02094185
02076468	2002	MERUELO D		02076468
0231138	2002	HUKUMURA M		0231138
0238726	2002	ALTON E W F		0238726
0238805	2002	JONES S		0238805
0236740	2002	LEE K F		0236740
0244321	2002	TUSCHL T		0244321
US 086356	2002	TUSCHI T		US 086356
EP 1083232	2001	JUNG G		EP 1083232
EP 1195438	2002	REGTS D G		EP 1195438
EP 1229134	2002	GIORDANO T		EP 1229134
US 192685	2002	THOMPSON J D		US 192685
US 5853719	1998	GILBOA E		US 5853719
US 5989908	1999	SCANLON K J		US 5989908
1S 6057156	2000	AKHTAR S		1S 6057156
US 6346398	2002	STINCHCOMB D		US 6346398
US 6391632	2002	FROLOV I		US 6391632
US 6464972	2002	GROMEIER M		US 6464972
US 6492512	2002	DRAPER K G		US 6492512
9905094	1999	REYNOLDS M		9905094
9904819	1999	KLIMUK S		9904819
9915703	1999	CZUBAYKO F		9915703
9914346	1999	WOOLF T M		9914346
9928487	1999	KHROMYKH A A		9928487
9923209	1999	TANG C K		9923209
9932619	1999	MONTGOMERY M K		9932619

L8 ANSWER 14 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 9

ACCESSION NUMBER: 2003:281242 BIOSIS
DOCUMENT NUMBER: PREV200300281242
TITLE: Enhancement of virus-induced gene silencing through viral-based production of inverted-repeats.
AUTHOR(S): Lacomme, Christophe [Reprint Author]; Hrubikova, Katarina; Hein, Ingo
CORPORATE SOURCE: Programme of Cell-to-Cell Communication, Scottish Crop

Research Institute, Invergowrie, Dundee, DD2 5DA, UK
clacom@scri.sari.ac.uk
SOURCE: Plant Journal, (May 2003) Vol. 34, No. 4, pp. 543-553.
print.
ISSN: 0960-7412 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 19 Jun 2003
Last Updated on STN: 19 Jun 2003
ABSTRACT:Plant virus-based vectors carrying sequences homologous to endogenous genes trigger silencing through a homology-dependent RNA degradation mechanism. This phenomenon, called virus-induced gene silencing (VIGS), has potential as a powerful reverse-genetics tool in functional genomic programmes through transient, loss-of-function screens. Here, we describe a method to enhance the robustness of the VIGS phenotype by increasing the level of **dsRNA** molecule production, a critical step in the VIGS response. Incorporation of 40-60 base direct inverted-repeats into a plant **viral vector** generates RNA molecules that form **dsRNA** hairpins. A tobacco mosaic virus (TMV)-based vector carrying such inverted-repeats, homologous to a green fluorescent protein (gfp) transgene or an endogenous phytoene desaturase (pds) gene, generated a stronger and more pervasive VIGS phenotype than constructs carrying corresponding cDNA fragments in sense or antisense orientation. Real-time RT-PCR indicated that there was up to a threefold reduction in target mRNA accumulation in the tissues where VIGS was triggered by constructs carrying inverted-repeats compared to those where it was triggered by sense or antisense constructs. Moreover, an enhanced VIGS pds phenotype was observed using a different vector, based on barley stripe mosaic virus, in the monocotyledonous host barley. This demonstrates that VIGS can be significantly improved through the inclusion of small inverted-repeats in plant virus-based vectors, generating a more robust loss-of-function phenotype. This suggests that **dsRNA** formation can be a limiting factor in the VIGS phenomenon.
CONCEPT CODE: Genetics - General 03502
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Genetics of bacteria and viruses 31500
Virology - General and methods 33502
INDEX TERMS: Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics)
INDEX TERMS: Chemicals & Biochemicals
double-stranded RNA;
hairpin
INDEX TERMS: Methods & Equipment
real-time RT-PCR [real-time reverse transcriptase-polymerase chain reaction]: genetic techniques, laboratory techniques
INDEX TERMS: Miscellaneous Descriptors
virus-induced gene silencing: inverted repeat production
ORGANISM: Classifier
Positive Sense ssRNA Viruses 03600
Super Taxa
Viruses; Microorganisms
Organism Name
Barley stripe mosaic virus (species)
Tobacco mosaic virus (species)
Taxa Notes
Microorganisms, Positive Sense Single-Stranded RNA Viruses, Viruses

L8 ANSWER 15 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:464620 BIOSIS

DOCUMENT NUMBER: PREV200400462748
TITLE: Tumor-targeting gene therapy: Ras-dependent oncolytic **viral vectors**.
AUTHOR(S): Hamada, Hirofumi [Reprint Author]
CORPORATE SOURCE: Dept Mol MedChuo Ku, Sapporo Med Univ, South 1,West 17, Sapporo, Hokkaido, 0608556, Japan
hhamada@sapmed.ac.jp
SOURCE: Virus (Nagoya), (December 2003) Vol. 53, No. 2, pp. 195-199. print.
CODEN: UIRUAF. ISSN: 0042-6857.
DOCUMENT TYPE: Article
LANGUAGE: Japanese
ENTRY DATE: Entered STN: 1 Dec 2004
Last Updated on STN: 1 Dec 2004
CONCEPT CODE:
Genetics - General 03502
Biochemistry studies - Proteins, peptides and amino acids 10064
Biophysics - Membrane phenomena 10508
Pathology - Therapy 12512
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Neoplasms - Therapeutic agents and therapy 24008
Genetics of bacteria and viruses 31500
Virology - General and methods 33502

INDEX TERMS: Major Concepts
Membranes (Cell Biology); Methods and Techniques; Molecular Genetics (Biochemistry and Molecular Biophysics); Tumor Biology

INDEX TERMS: Parts, Structures, & Systems of Organisms
plasma: blood and lymphatics

INDEX TERMS: Diseases
tumor: neoplastic disease, therapy
Neoplasms (MeSH)

INDEX TERMS: Chemicals & Biochemicals
Ras: signaling pathway; oncogene; **viral vector**

INDEX TERMS: Methods & Equipment
gene therapy: clinical techniques, genetic techniques, laboratory techniques, therapeutic and prophylactic techniques

INDEX TERMS: Miscellaneous Descriptors
host-cell permissiveness; viral oncolysis

ORGANISM: Classifier
Adenoviridae 03116
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
Adenovirus (species): replication
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Herpesviridae 03115
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
Herpes simplex virus 1 (common) [Human herpesvirus 1 (species)]
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier

Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
Reovirus (common)
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

L8 ANSWER 16 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2003:70351 BIOSIS
DOCUMENT NUMBER: PREV200300070351
TITLE: Selectively replicating **viral vectors**.
AUTHOR(S): Nemunaitis, John [Reprint Author]; Edelman, Jeffrey
CORPORATE SOURCE: US Oncology, Inc., 3535 Worth Street, Collins Building, 5th Floor, Dallas, TX, 75246, USA
john.nemunaitis@usoncology.com
SOURCE: Cancer Gene Therapy, (December 2002) Vol. 9, No. 12, pp. 987-1000. print.
ISSN: 0929-1903 (ISSN print).
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 29 Jan 2003
Last Updated on STN: 29 Jan 2003
CONCEPT CODE: Genetics - General 03502
Pathology - Therapy 12512
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Neoplasms - Therapeutic agents and therapy 24008
Genetics of bacteria and viruses 31500
Virology - General and methods 33502
INDEX TERMS: Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Tumor Biology
INDEX TERMS: Diseases
cancer: neoplastic disease, therapy
Neoplasms (MeSH)
INDEX TERMS: Methods & Equipment
gene therapy: clinical techniques, genetic techniques, laboratory techniques, therapeutic and prophylactic techniques
ORGANISM: Classifier
Flaviviridae 03615
Super Taxa
Positive Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
West Nile virus (species): strain-Egypt 101
Taxa Notes
Microorganisms, Positive Sense Single-Stranded RNA Viruses, Viruses
ORGANISM: Classifier
Herpesviridae 03115
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
herpes simplex virus (common): gene vector
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses
ORGANISM: Classifier
Orthomyxoviridae 03505

Super Taxa
Negative Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
influenza virus (common): gene vector
Taxa Notes
Microorganisms, Negative Sense Single-Stranded RNA Viruses, Viruses

ORGANISM: Classifier
Paramyxoviridae 03503
Super Taxa
Negative Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
Mumps virus (common): gene vector
Mumps virus (species) [Mumps virus (common)]
Taxa Notes
Microorganisms, Negative Sense Single-Stranded RNA Viruses, Viruses

ORGANISM: Classifier
Parvoviridae 03205
Super Taxa
ssDNA Viruses; Viruses; Microorganisms
Organism Name
Adenovirus (common): gene vector, promoter-inducible
ONYX 015 Adenovirus (common)
ONYX 411 Adenovirus (common): gene vector
Taxa Notes
Single-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Poxviridae 03110
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
Vaccinia virus (species): gene vector
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus (common): gene vector
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Viruses 03000
Super Taxa
Microorganisms
Organism Name
virus (common): cytotoxic effect, selectively replicating
Taxa Notes
Microorganisms, Viruses

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on STN DUPLICATE 10

ACCESSION NUMBER: 2002419971 EMBASE
TITLE: RNAi and **viral vectors** as useful tools in the functional genomics of plants. Construction of BMV-based vectors for RNA delivery into plant cells.
AUTHOR: Wojtkowiak A.; Siek A.; Alejska M.; Jarmolowski A.; Szweykowska-Kulinska Z.; Figlerowicz M.

CORPORATE SOURCE: A. Wojtkowiak, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Noskowskiego 12/14, 61-704 Poznan, Poland
SOURCE: Cellular and Molecular Biology Letters, (2002) 7/2 A (511-522).
Refs: 20
ISSN: 1425-8153 CODEN: CMBLFF
COUNTRY: Poland
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:
The sequencing of several complete genomes and the development of a DNA microarray technology are among the most important achievements of molecular biology. They gave the proper grounds for the development of modern functional genomics. However, there is one additional condition which needs to be satisfied to truely enable the study of how a genome works: a suitable method of selectively inducing and silencing the expression of each individual gene. The methods used so far have usually only permitted the influencing of gene expression through genetic manipulations at the DNA level (genetically modified plants). The discovery of RNA interference (RNAi) opens up completely new possibilities of research on the functioning of particular plant genes, without the necessity of altering the genome structure. In this case, interference takes place at the transcript level. Thus, at any given moment during plant development, the expression of a specific gene (or several genes) can be inhibited, even if it is important for the survival of the organism under study. To this end, a **double-stranded RNA** inducing the RNAi phenomenon has to be delivered into the plant cell. Here we describe the construction of four brome mosaic virus-based vectors, which, as our preliminary data indicate, can be used to transfer RNA into barley cells.

CONTROLLED TERM: Medical Descriptors:
*virus vector
*gene targeting
genomics
plant cell
DNA microarray
genetic manipulation
gene structure
plant development
Mosaic virus
conference paper
Drug Descriptors:
*transfer RNA
CAS REGISTRY NO.: (transfer RNA) 9014-25-9

L8 ANSWER 18 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:315413 BIOSIS
DOCUMENT NUMBER: PREV200300315413
TITLE: VALIDATION PLATFORM FOR RAPID CHARACTERIZATION OF FUNCTIONAL ROLE OF BRAIN DAMAGE - RELATED GENES.
AUTHOR(S): Gan, L. [Reprint Author]; Anton, K. E. [Reprint Author]; Masterson, B. A. [Reprint Author]; Ye, S. [Reprint Author]; Urfer, R. [Reprint Author]; Gonzalez-Zulueta, M. [Reprint Author]
CORPORATE SOURCE: AGY Therapeutics, South San Francisco, CA, USA
SOURCE: Society for Neuroscience Abstract Viewer and Itinerary Planner, (2002) Vol. 2002, pp. Abstract No. 623.9. http://sfn.scholarone.com. cd-rom.
Meeting Info.: 32nd Annual Meeting of the Society for

Neuroscience. Orlando, Florida, USA. November 02-07, 2002. Society for Neuroscience.

DOCUMENT TYPE: Conference; (Meeting)
Conference; (Meeting Poster)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 9 Jul 2003
Last Updated on STN: 9 Jul 2003

ABSTRACT:In the early days of the post-genomic era restoration of dysfunctional neuronal pathways in the CNS is still a major scientific and pharmaceutical challenge. Functional genomics approaches have aided greatly in the understanding of the molecular basis of CNS disorders. Comprehensive gene expression profiling of disease states linked to powerful bioinformatic tools have generated a vast body of information that need further and careful analyses. In order to efficiently and rapidly characterize the functional role of identified regulated genes in brain disorders, we have established a high throuput validation platform as part of the imAGYneTM platform for gene identification and characterization. Our validation system is based on the systematic and rapid modulation of gene expression levels through knockdown and overexpression technologies. To block gene expression of regulated genes, RNA interference is used via generation of long **dsRNA** and short iRNA. To induce gene overexpression, recombinant adeno-associated **viral** ***vectors*** are used. Our functional validation platform links gene expression modulation with relevant functional assays in vitro and in vivo. In vitro functional assays include survival assessment of neuronal cells after exposure to oxygen and glucose deprivation, or to direct and indirect Ab peptide toxicity. The imAGYne platform allows for systematic identification, selection and characterization of genes and their products that constitute the basis for further and ongoing drug discovery and development efforts which will yield novel therapeutics for acute and chronic brain disorders.

CONCEPT CODE:
General biology - Symposia, transactions and proceedings 00520
Cytology - Animal 02506
Genetics - General 03502
Nervous system - Physiology and biochemistry 20504
Nervous system - Pathology 20506
Genetics of bacteria and viruses 31500
Virology - General and methods 33502

INDEX TERMS: Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Nervous System (Neural Coordination)

INDEX TERMS: Parts, Structures, & Systems of Organisms
brain: nervous system; neuronal cell: nervous system

INDEX TERMS: Diseases
brain damage: injury, nervous system disease

INDEX TERMS: Chemicals & Biochemicals
gene: expression, regulation

INDEX TERMS: Methods & Equipment
high throughput validation platform: laboratory equipment

INDEX TERMS: Miscellaneous Descriptors
genetic characterization

ORGANISM: Classifier
Parvoviridae 03205
Super Taxa
ssDNA Viruses; Viruses; Microorganisms
Organism Name
adeno-associated virus (common): gene vector
Taxa Notes
Single-Stranded DNA Viruses, Microorganisms, Viruses

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on STN DUPLICATE 11

ACCESSION NUMBER: 2001249170 EMBASE

TITLE: Reovirus reverse genetics: Incorporation of the cat gene into the reovirus genome.

AUTHOR: Roner M.R.; Joklik W.K.

CORPORATE SOURCE: M.R. Roner, Department of Biological Sciences, Center for Molecular Biology, Florida Atlantic University, Boca Raton, FL 33431, United States. mroner@fau.edu

SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (2001) 98/14 (8036-8041).
Refs: 12
ISSN: 0027-8424 CODEN: PNASA6

COUNTRY: United States

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 004 Microbiology

LANGUAGE: English

SUMMARY LANGUAGE: English

ABSTRACT:
We have modified the infectious reovirus RNA system so as to generate a reovirus reverse genetics system. The system consists of (i) the plus strands of nine wild-type reovirus genome segments; (ii) transcripts of the genetically modified cDNA form of the tenth genome segment; and (iii) a cell line transformed so as to express the protein normally encoded by the tenth genome segment. In the work described here, we have generated a serotype 3 reovirus into the S2 **double-stranded RNA** genome segment of which the CAT gene has been cloned. The virus is stable, replicates in cells that have been transformed (so as to express the S2 gene product, protein σ2), and expresses high levels of CAT activity. This technology can be extended to members of the orbivirus and rotavirus genera. This technology provides a powerful system for basic studies of **double-** ***stranded*** **RNA** virus replication; a nonpathogenic **viral** ***vector*** that replicates to high titers and could be used for clinical applications; and a system for providing nonselectable viral variants (the result of mutations, insertions, and deletions) that could be valuable for the construction of viral vaccine strains against human and animal pathogens.

CONTROLLED TERM: Medical Descriptors:
*Reovirus
*viral genetics
*virus genome
cell transformation
cell line
genetic code
protein expression
RNA structure
molecular cloning
gene activity
Orbivirus
Rotavirus
virus replication
virus mutation
nonhuman
controlled study
article
priority journal
Drug Descriptors:
*virus protein
*protein cat
complementary DNA
virus DNA
double stranded RNA
virus vaccine

L8 ANSWER 20 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:390161 SCISEARCH
THE GENUINE ARTICLE: 429CY
TITLE: Virus-mediated reprogramming of gene expression in plants
AUTHOR: Lindbo J A (Reprint); Fitzmaurice W P; della-Cioppa G
CORPORATE SOURCE: Large Scale Biol Corp, 3333 Vaca Valley Pkwy, Vacaville, CA 95688 USA (Reprint); Large Scale Biol Corp, Vacaville, CA 95688 USA
COUNTRY OF AUTHOR: USA
SOURCE: CURRENT OPINION IN PLANT BIOLOGY, (JUN 2001) Vol. 4, No. 3, pp. 181-185.
Publisher: CURRENT BIOLOGY LTD, 84 THEOBALDS RD, LONDON WC1X 8RR, ENGLAND.
ISSN: 1369-5266.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 50
ABSTRACT:

Plant viruses have made many significant contributions to plant biology over the years: they have provided plant researchers with functional promoters, transient expression systems and, most recently, with critical insights into the phenomenon of posttranscriptional gene silencing. Plant virus expression vectors have the ability to either overexpress genes or suppress gene expression in plants. Whereas the 'rules' for gene expression are generally understood conceptually, the mechanisms for the induction of gene silencing are less well understood. Recent advances in the understanding of both the biological role and the mode of action of posttranscriptional gene silencing will affect both the design and the use of plant **viral** ***vectors*** and transgenic plants for either gene-overexpression or gene-silencing applications.

CATEGORY: PLANT SCIENCES
SUPPL. TERM PLUS: **DOUBLE-STRANDED-RNA;** C-ELEGANS; NICOTIANA-BENTHAMIANA; TRANSGENIC PLANTS; TOBACCO PLANTS; SUPPRESSION; RESISTANCE; DNA; INTERFERENCE; SYNTHASE

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
ALKAFF N S	1998	279	2113	SCIENCE
ANANDALAKSHMI R	1998	95	13079	P NATL ACAD SCI USA
ANANDALAKSHMI R	2000	290	142	SCIENCE
BASS B L	2000	101	235	CELL
BAULCOMBE D C	1999	2	109	CURR OPIN PLANT BIOL
BECLIN C	1998	252	313	VIROLOGY
CHAPMAN S	1992	2	549	PLANT J
COGONI C	1997	2	438	TRENDS PLANT SCI
COGONI C	1999	286	2342	SCIENCE
COVEY S N	2000	43	307	PLANT MOL BIOL
DALMAY T	2000	101	543	CELL
DING B	1995	207	345	VIROLOGY
DOUGHERTY W G	1994	7	544	MOL PLANT MICROBE IN
DOUGHERTY W G	1995	7	399	CURR OPIN CELL BIOL
FAGARD M	2000	43	285	PLANT MOL BIOL
FIRE A	1998	391	806	NATURE
FIRE A	1999	15	358	TRENDS GENET
HAMILTON A J	1999	286	950	SCIENCE
HAMMOND S M	2000	404	293	NATURE

KASSCHAU K D	1998	95	461	CELL
KETTING R F	2000	404	296	NATURE
KETTING R F	1999	99	133	CELL
KUMAGAI M H	1995	92	1679	P NATL ACAD SCI USA
KUMAGAI M H	1998	14	305	PLANT J
LINDBO J A	1993	5	1749	PLANT CELL
LLAVE C	2000	97	13401	P NATL ACAD SCI USA
MARATHE R	2000	43	295	PLANT MOL BIOL
MATZKE M A	2000	43	401	PLANT MOL BIOL
MCCORMICK A A	1999	96	703	P NATL ACAD SCI USA
METZLAFF M	1997	88	845	CELL
MOREL J B	2000	43	275	PLANT MOL BIOL
MOURRAINP	2000	101	533	CELL
MUELLER E	1995	7	1001	PLANT J
NAPOLI C	1990	2	279	PLANT CELL
PALAUQUI J C	1997	16	4738	EMBO J
RATCLIFF F G	1999	11	1207	PLANT CELL
RATCLIFF F	1997	27	1558	SCIENCE
SANFORD J C	1985	113	395	J THEOR BIOL
SIJEN T	2000	22	520	BIOESSAYS
SMARDON A	2000	10	R393	CURR BIOL
SMARDON A	2000	10	169	CURR BIOL
SMITH N A	2000	407	319	NATURE
STEMMER W P C	1994	91	10747	P NATL ACAD SCI USA
VOINNET O	1999	96	14147	P NATL ACAD SCI USA
VOINNET O	1997	389	553	NATURE
VOINNET O	2000	103	157	CELL
WATERHOUSE P M	1999	4	452	TRENDS PLANT SCI
ZAMORE P D	2000	101	25	CELL

STN Patent No. (RPN)	Year (RPY)	Ref. Inventor/Assignee (RIN)	Type	Ref. Patent No. (RPN)
US 5316931	1994	DONSON J		US 5316931
US 5840481	1998	JOHNSTON S A		US 5840481

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ACCESSION NUMBER: 2001:306231 BIOSIS
DOCUMENT NUMBER: PREV200100306231
TITLE: Delivery systems intended for in vivo gene therapy of cancer: Targeting and replication competent **viral vectors**.
AUTHOR(S): Galanis, Evanthia [Reprint author]; Vile, Richard; Russell, Stephen J.
CORPORATE SOURCE: Department of Oncology, Mayo Clinic, 200 First Street SW, Rochester, MN, 55905, USA
galanis.evanthia@mayo.edu
SOURCE: Critical Reviews in Oncology-Hematology, (June, 2001) Vol. 38, No. 3, pp. 177-192. print.
ISSN: 1040-8428.
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Jun 2001
Last Updated on STN: 19 Feb 2002
CONCEPT CODE: Virology - Animal host viruses 33506
Genetics - General 03502
Genetics - Human 03508
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Genetics of bacteria and viruses 31500

Medical and clinical microbiology - Virology 36006

INDEX TERMS:
Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Oncology (Human Medicine, Medical Sciences)

INDEX TERMS:
Diseases
cancer: neoplastic disease, in-vivo gene therapy
Neoplasms (MeSH)

ORGANISM:
Classifier
Adenoviridae 03116
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
adenovirus: gene vector, in-vivo gene delivery
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM:
Classifier
Herpesviridae 03115
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
Epstein-Barr virus: gene vector, in-vivo gene delivery
herpes simplex virus type 1: gene vector, in-vivo gene delivery
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM:
Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human: patient
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

ORGANISM:
Classifier
Paramyxoviridae 03503
Super Taxa
Negative Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
Newcastle disease virus: gene vector, in-vivo gene delivery
Taxa Notes
Microorganisms, Negative Sense Single-Stranded RNA Viruses, Viruses

ORGANISM:
Classifier
Parvoviridae 03205
Super Taxa
ssDNA Viruses; Viruses; Microorganisms
Organism Name
adeno-associated virus: gene vector, in-vivo gene delivery
Taxa Notes
Single-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM:
Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus: gene vector, in-vivo gene delivery
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

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ACCESSION NUMBER: 2001:570025 BIOSIS
DOCUMENT NUMBER: PREV200100570025
TITLE: Bioengineering the oncolytic potential of reovirus.
AUTHOR(S): Brown, Earl G. [Reprint author]; Liu, Hong [Reprint author]; Mbisa, Jean L. [Reprint author]; Bell, John [Reprint author]; Stojdl, David [Reprint author]
CORPORATE SOURCE: Centre for Research in Biopharmaceuticals and Dept. of Biochemistry, Microbiology and Immunology, University of Ottawa, Ottawa, Ontario, K1H 8M5, Canada
SOURCE: Gene Therapy, (October, 2001) Vol. 8, No. Supplement 1, pp. S7. print.
Meeting Info.: Harold W. Siebens Conference on Replicating Vectors for Gene Therapy. Rochester, Minnesota, USA. October 05-07, 2001.
ISSN: 0969-7128.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Dec 2001
Last Updated on STN: 25 Feb 2002
CONCEPT CODE: General biology - Symposia, transactions and proceedings 00520
Genetics - General 03502
Genetics - Animal 03506
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Enzymes - General and comparative studies: coenzymes 10802
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Genetics of bacteria and viruses 31500
Virology - General and methods 33502
Virology - Animal host viruses 33506
INDEX TERMS: Major Concepts
Genetics; Tumor Biology; Virology
INDEX TERMS: Chemicals & Biochemicals
RNA; protein kinase; **viral vector**
INDEX TERMS: Methods & Equipment
gene therapy: gene therapy method, recombinant gene expression
INDEX TERMS: Miscellaneous Descriptors
bioengineering; oncolysis; viral replication; Meeting Abstract
ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
mouse
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus: oncolytic traits, vector
Taxa Notes

Double-Stranded RNA
Viruses, Microorganisms, Viruses

REGISTRY NUMBER: 9026-43-1Q (protein kinase)
80449-02-1Q (protein kinase)
134549-83-0Q (protein kinase)
372092-80-3Q (protein kinase)

L8 ANSWER 23 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:570023 BIOSIS
DOCUMENT NUMBER: PREV200100570023
TITLE: Reovirus therapy of metastatic cancer models in immune-competent mice.
AUTHOR(S): Lee, Patrick W. K. [Reprint author]
CORPORATE SOURCE: Faculty of Medicine, University of Calgary, Calgary, AB, Canada
SOURCE: Gene Therapy, (October, 2001) Vol. 8, No. Supplement 1, pp. S6. print.
Meeting Info.: Harold W. Siebens Conference on Replicating Vectors for Gene Therapy. Rochester, Minnesota, USA. October 05-07, 2001.
ISSN: 0969-7128.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Dec 2001
Last Updated on STN: 25 Feb 2002
CONCEPT CODE: General biology - Symposia, transactions and proceedings 00520
Genetics - General 03502
Genetics - Animal 03506
Pathology - Therapy 12512
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Neoplasms - Therapeutic agents and therapy 24008
Genetics of bacteria and viruses 31500
Virology - General and methods 33502
Virology - Animal host viruses 33506
INDEX TERMS: Major Concepts
Genetics; Tumor Biology; Virology
INDEX TERMS: Diseases
cancer: neoplastic disease, metastasis, treatment
Neoplasms (MeSH)
INDEX TERMS: Chemicals & Biochemicals
reovirus vector: vaccine
INDEX TERMS: Methods & Equipment
gene therapy: gene therapy method, recombinant gene expression; reovirus therapy: therapeutic method; **viral vector**: drug delivery method
INDEX TERMS: Miscellaneous Descriptors
Meeting Abstract
ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
mouse: immune-competent
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
ORGANISM: Classifier
Reoviridae 03402

Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus: vector
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

L8 ANSWER 24 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:253087 BIOSIS
DOCUMENT NUMBER: PREV200200253087
TITLE: DNA vaccines for viral infections: Basic studies and applications.
AUTHOR(S): Robinson, Harriet L. [Reprint author]; Pertmer, Tamera M. [Reprint author]
CORPORATE SOURCE: Yerkes Regional Primate Research Center, Emory University, Atlanta, GA, 30322, USA
SOURCE: Maramorosch, Karl [Editor]; Murphy, Frederick A. [Editor]; Shatkin, Aaron J. [Editor]. Adv. Virus Res., (2000) pp. 1-74. Advances in Virus Research. print.
Publisher: Academic Press Inc., 525 B Street, Suite 1900, San Diego, CA, 92101-4495, USA; Academic Press Ltd., 24-28 Oval Road, London, NW1 7DX, UK. Series: Advances in Virus Research.
CODEN: AVREA8. ISSN: 0065-3527. ISBN: 0-12-039855-9 (cloth).
DOCUMENT TYPE: Book
Book; (Book Chapter)
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Apr 2002
Last Updated on STN: 24 Apr 2002
CONCEPT CODE: Cytology - Animal 02506
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Pathology - Therapy 12512
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Pharmacology - General 22002
Virology - Animal host viruses 33506
Immunology - General and methods 34502
Medical and clinical microbiology - Virology 36006
INDEX TERMS: Major Concepts
Immune System (Chemical Coordination and Homeostasis); Infection; Pharmaceuticals (Pharmacology)
INDEX TERMS: Parts, Structures, & Systems of Organisms
bone marrow cells: blood and lymphatics, immune system
INDEX TERMS: Diseases
viral infection: viral disease
Virus Diseases (MeSH)
INDEX TERMS: Chemicals & Biochemicals
DNA; DNA vaccine: application, vaccine; **viral vector**: drug delivery system
INDEX TERMS: Miscellaneous Descriptors
immunization; viral classification; Book Chapter
ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
rotavirus: pathogen
Taxa Notes

L8 ANSWER 25 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:715098 SCISEARCH
THE GENUINE ARTICLE: 354PX
TITLE: Poxvirus as a vector to transduce human dendritic cells for immunotherapy: abortive infection but reduced APC function
AUTHOR: Jenne L; Hauser C; Arrighi J F; Saurat J H; Hugin A W (Reprint)
CORPORATE SOURCE: UNIV HOSP, DEPT DERMATOL 4 783, 24 RUE MICHELI DU CREST, CH-1211 GENEVA 14, SWITZERLAND (Reprint); UNIV HOSP, DEPT DERMATOL DHURDV, CH-1211 GENEVA 14, SWITZERLAND; UNIV HOSP, DIV IMMUNOL & ALLERGY, CH-1211 GENEVA 14, SWITZERLAND; UNIV ERLANGEN NURNBERG, DEPT DERMATOL, D-8520 ERLANGEN, GERMANY
COUNTRY OF AUTHOR: SWITZERLAND; GERMANY
SOURCE: GENE THERAPY, (SEP 2000) Vol. 7, No. 18, pp. 1575-1583. Publisher: NATURE PUBLISHING GROUP, HOUNDMILLS, BASINGSTOKE RG21 6XS, HAMPSHIRE, ENGLAND. ISSN: 0969-7128.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 67
ABSTRACT:

Dendritic cells (DC) are potent antigen-presenting cells (APC). Ongoing preclinical and clinical studies exploit this capacity for the immunotherapy of tumors. We tested vaccinia virus (VV) as a vector to transduce human DC. Immature and mature DC were prepared from blood monocytes and infected with (1) recombinant VV expressing GFP to analyze infection rates, virus replication in DC and the effect of infection on DC phenotype and (2) recombinant VV expressing beta-galactosidase (beta GAL) under the control of viral early, intermediate and late promoters to analyze the poxvirus-driven gene expression. While the infection rate in DC was comparable to a permissive fibroblast cell line, viral beta GAL gene expression was limited to early promoters. Genes under the control of virus late promoters were not expressed by VV in DC, indicating an abortive infection. VV infection selectively reduced the surface expression of the costimulatory molecule CD80 and the DC maturation marker CD83 on mature DC while other surface molecules including CD86 and MHC remained unchanged. In line with this finding, there was a pronounced reduction in the capacity of VV-infected DC to stimulate allogeneic or autologous T cells in mixed lymphocyte reactions. Furthermore, VV infection inhibited the maturation of immature DC after exposure to proinflammatory cytokines. These results indicate that VV-derived vectors may have complex effects on their target cells. in the case of DC used for immunotherapy, this may be detrimental to their function as potent APC and particularly their capacity to activate T helper cells.

CATEGORY: BIOTECHNOLOGY & APPLIED MICROBIOLOGY; GENETICS & HEREDITY; BIOCHEMISTRY & MOLECULAR BIOLOGY; MEDICINE, RESEARCH & EXPERIMENTAL
SUPPLEMENTARY TERM: dendritic cells; poxvirus; vaccinia virus; **viral vector**; gene therapy; immunotherapy
SUPPL. TERM PLUS: CD4(+) T-CELLS; **DOUBLE-STRANDED-RNA**; ANTIGEN-PRESENTING CELLS; VACCINIA VIRUS; GENE-TRANSFER; LYMPHOCYTE-RESPONSES; IMMUNE-RESPONSES; ANTITUMOR IMMUNITY; INDUCTION; VACCINATION

REFERENCE(S):

Referenced Author	Year	VOL	ARN PG	Referenced Work

(RAU)	(RPY)	(RVL)	(RPG)	(RWK)
AGADJANYAN M G	1999	162	3417	J IMMUNOL
ALBERT M L	1998	392	86	NATURE
AMOSCATO A A	1998	161	4023	J IMMUNOL
ARRIGHI J F	1999	93	2244	BLOOD
ARTHUR J F	1997	4	17	CANCER GENE THER
BACHMANN M F	1998	161	5791	J IMMUNOL
BALDICK C J	1993	67	3515	J VIROL
BANCHEREAU J	1998	392	245	NATURE
BHARDWAJ N	1994	94	797	J CLIN INVEST
BHARDWAJ N	1992	175	267	J EXP MED
BRODER C C	1994	142	167	GENE
BROWN M	1999	6	238	CANCER GENE THER
BULLER R M L	1987	328	77	NATURE
CARDIN R D	1996	184	863	J EXP MED
CARROLL M W	1997	8	573	CURR OPIN BIOTECH
CELLA M	1999	189	821	J EXP MED
CHAKRABARTI S	1997	23	1094	BIOTECHNIQUES
DAVISON A J	1989	210	749	J MOL BIOL
DIETZ A B	1998	91	392	BLOOD
DINICOLA M	1998	5	350	CANCER GENE THER
DOMINGUEZ J	1998	220	115	J IMMUNOL METHODS
DRILLIEN R	2000	268	471	VIROLOGY
ENGELMAYER J	1999	163	6762	J IMMUNOL
FAN Z	1997	159	4973	J IMMUNOL
FARUQI T R	1997	159	3989	J IMMUNOL
FONTENEAU J F	1997	159	2831	J IMMUNOL
FUGIERVIVIER I	1997	186	813	J EXP MED
GERLACH J T	1999	117	933	GASTROENTEROLOGY
GROSJEAN I	1997	186	801	J EXP MED
HANKE T	1998	16	439	VACCINE
HEITMEIER M R	1998	273	15301	J BIOL CHEM
HOLZER G W	1999	73	4536	J VIROL
HSU F J	1996	2	52	NAT MED
HUNG K	1998	188	2357	J EXP MED
JONULEIT H	1997	27	3135	EUR J IMMUNOL
KALAMS S A	1998	188	2199	J EXP MED
KANTOR J	1992	52	6917	CANCER RES
KAPLAN J M	1999	163	699	J IMMUNOL
KRUSE M	2000	74	7127	J VIROL
MATLOUBIAN M	1994	68	8056	J VIROL
MIZUOCHI T	1989	142	270	J IMMUNOL
MOSS B	1998			CURRENT PROTOCOLS MO
MOSS B	1996		2637	FIELDS VIROLOGY
NESTLE F O	1998	4	328	NAT MED
OSSENDORP F	1998	187	693	J EXP MED
PAOLETTI E	1996	93	11349	P NATL ACAD SCI USA
PERKUS M E	1995	58	1	J LEUKOCYTE BIOL
PLEBANSKI M	1998	28	4345	EUR J IMMUNOL
SALIO M	1999	29	3245	EUR J IMMUNOL
SALLUSTO F	1995	182	389	J EXP MED
SCHNEIDER J	1998	4	397	NAT MED
SCHULER G	1997	186	1183	J EXP MED
SMITH G L	1997	159	137	IMMUNOL REV
SUBKLEWE M	1999	94	1372	BLOOD
SUTTER G	1992	89	10847	P NATL ACAD SCI USA
TARTAGLIA J	1992	188	217	VIROLOGY
THURNER B	1999	190	1669	J EXP MED
TOES R E M	1999	189	753	J EXP MED
VANDERBRUGGEN P	1994	24	3038	EUR J IMMUNOL
VANTENDELOO V F I	1998	5	700	GENE THER

VERDIJK R M	1999	163	57	J IMMUNOL
VONHERRATH M G	1996	70	1072	J VIROL
YOUNG J W	1990	171	1315	J EXP MED
YOUNG J W	1996	183	7	J EXP MED
ZAJAC A J	1998	188	2205	J EXP MED
ZHONG L	1999	29	964	EUR J IMMUNOL
ZIMMERMANN C	1997	71	1802	J VIROL

L8 ANSWER 26 OF 37 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:372199 SCISEARCH
THE GENUINE ARTICLE: 313BZ
TITLE: Inhibition of pyruvate-ferredoxin oxidoreductase gene expression in Giardia lamblia by a virus-mediated hammerhead ribozyme
AUTHOR: Dan M; Wang A L; Wang C C (Reprint)
CORPORATE SOURCE: UNIV CALIF SAN FRANCISCO, DEPT PHARMACEUT CHEM, SAN FRANCISCO, CA 94143 (Reprint); UNIV CALIF SAN FRANCISCO, DEPT PHARMACEUT CHEM, SAN FRANCISCO, CA 94143
COUNTRY OF AUTHOR: USA
SOURCE: MOLECULAR MICROBIOLOGY, (APR 2000) Vol. 36, No. 2, pp. 447-456.
Publisher: BLACKWELL SCIENCE LTD, P O BOX 88, OSNEY MEAD, OXFORD OX2 0NE, OXON, ENGLAND.
ISSN: 0950-382X.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 48
ABSTRACT:

Giardia lamblia is a primitive eukaryotic microorganism that derives its metabolic energy primarily from anaerobic glycolysis. In trophozoites, pyruvate-ferredoxin oxidoreductase (PFOR) converts pyruvate to acetyl-CoA with the transfer of a pair of electrons to ferredoxin, which can then reduce metronidazole and activate it into a potent antigiardiasis agent. It is unclear, however, whether this anaerobic disposal of electrons is essential for the energy metabolism in Giardia. In the present study, cDNAs encoding hammerhead ribozyme flanked with various lengths of antisense PFOR RNA were cloned into a **viral vector** pC631pac derived from the genome of giardiavirus (GLV). RNA transcripts of the plasmids showed high cleavage activities on PFOR mRNA in vitro. They were introduced into GLV-infected G. lamblia trophozoites by electroporation and stablized in the transfected cells via serial passages under puromycin selection. PFOR mRNA and enzyme activity in the transfected cells were decreased by 46-60% with the ribozyme PRzS flanked with 20 nt PFOR antisense RNA on each arm and by 69-80% with the ribozyme PRzL flanked with 600 and 1500 nt PFOR antisense RNA. PRzS without the inserted ribozyme or ribozyme flanked with alcohol dehydrogenase E antisense RNA showed no effect on PFOR mRNA and activity. The ribozyme-transfected cells demonstrated significantly enhanced resistance to metronidazole and grew equally well under anaerobic and aerobic conditions. In contrast, the wild-type cells grew slightly better anaerobically than the transfectants but did not grow at all in aerobic conditions. Thus, the reduced PFOR expression enables Giardia to grow under molecular oxygen and the presence of PFOR enhances the anaerobic growth of Giardia with an increased susceptibility towards metronidazole. In addition, this study demonstrated for the first time the feasibility of using a viral RNA vector to express a ribozyme targeted at a specific mRNA in G. lamblia to reduce the expression of a specific gene.

CATEGORY: BIOCHEMISTRY & MOLECULAR BIOLOGY; MICROBIOLOGY
SUPPL. TERM PLUS: PARASITE ENTAMOEBA-HISTOLYTICA; **DOUBLE-STRANDED-RNA**; TRICHOMONAS-VAGINALIS; METRONIDAZOLE RESISTANCE; AMITOCHONDRIATE PROTIST;

DEHYDROGENASE COMPLEX; SUPEROXIDE-DISMUTASE; FIREFLY LUCIFERASE; ENERGY-METABOLISM; ESCHERICHIA-COLI

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
ADAM R D	1991	55	706	MICROBIOL REV
BERTRAND E	1997	74	311	METHOD MOL BIOL
BROWN D M	1996	241	155	EUR J BIOCHEM
BROWN D M	1998	28	149	INT J PARASITOL
BROWN D M	1995	72	47	MOL BIOCHEM PARASIT
BROWN D M	1999	98	203	MOL BIOCHEM PARASIT
CAJACOB C A	1985	260	14610	J BIOL CHEM
CAMPBELL T B	1997	25	4985	NUCLEIC ACIDS RES
CHEN I T	1993	13	289	MOL CELL BIOL
CHRYSTAL E J T	1980	18	566	ANTIMICROB AGENTS CH
HASELOFF J	1988	334	585	NATURE
HOMER D S	1999	16	1280	MOL BIOL EVOL
INGS R M J	1974	23	1421	BIOCHEM PHARMACOL
KERSCHER L	1982	7	371	TRENDS BIOCHEM SCI
KNIGHT R C	1978	27	2089	BIOCH PHARMACOL
KULDA J	1993	40	262	J EUKARYOT MICROBIOL
LARUSSO N F	1977	13	872	MOL PHARMACOL
LINDMARK D G	1980	1	1	MOL BIOCHEM PARASIT
LU S Q	1998	28	1341	INT J PARASITOL
MALMSTROM B G	1982	51	21	ANN REV BIOCH
MULLER M	1988	42	465	ANNU REV MICROBIOL
MULLER M	1986	35	37	BIOCHEM PHARMACOL
MULLER M	1998		109	EVOLUTIONARY RELATIO
NEUER G	1982	716	358	BIOCHIM BIOPHYS ACTA
PLANT C W	1976	2	203	J ANTIMICROB CHEMOTH
RAHMATULLAH M	1989	264	2221	J BIOL CHEM
REEVES R E	1977	252	726	J BIOL CHEM
ROSENTHAL B	1997	179	3736	J BACTERIOL
SAMARAWICKREMA N A	1997	40	833	J ANTIMICROB CHEMOTH
SANCHEZ L B	1998	354	57	ARCH BIOCHEM BIOPHYS
SANCHEZ L B	1996	378	240	FEBS LETT
SCHOFIELD P J	1991	45	39	MOL BIOCHEM PARASIT
TOWNSON S M	1994	56	173	ACTA TROP
TOWNSON S M	1994	220	439	EUR J BIOCHEM
TOWNSON S M	1996	79	183	MOL BIOCHEM PARASIT
UHLENBECK O C	1997	90	833	CELL
UHLENBECK O C	1987	328	596	NATURE
UPCROFT J A	1999	46	447	J EUKARYOT MICROBIOL
UPCROFT J A	1993	9	187	PARASITOL TODAY
VARA J	1985	33	197	GENE
WANG A L	1986	21	269	MOL BIOCHEM PARASIT
WASSMANN C	1999	274	26051	J BIOL CHEM
WU C H	1995	158	129	GENE
YU D C	1996	70	8752	J VIROL
YU D C	1998	96	151	MOL BIOCHEM PARASIT
YU D C	1995	15	4867	MOL CELL BIOL
YU D C	1996	2	824	RNA
ZAUG A J	1986	324	429	NATURE

L8 ANSWER 27 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:229794 BIOSIS
DOCUMENT NUMBER: PREV200000229794
TITLE: Dual-**viral vector** approach induced strong and long-lasting protective immunity against very virulent infectious bursal disease virus.

AUTHOR(S): Tsukamoto, Kenji [Reprint author]; Sato, Takanori; Saito, Shuji; Tanimura, Nobuhiko; Hamazaki, Naoki; Mase, Masaji; Yamaguchi, Shigeo

CORPORATE SOURCE: Department of Virology, National Institute of Animal Health, 3-1-1 Kannondai, Tsukuba, Ibaraki, 305-0856, Japan

SOURCE: Virology, (April 10, 2000) Vol. 269, No. 2, pp. 257-267. print.
CODEN: VIRLAX. ISSN: 0042-6822.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 7 Jun 2000
Last Updated on STN: 5 Jan 2002

ABSTRACT:To induce strong protective immunity against very virulent infectious bursal disease virus (vvIBDV) in chickens, two **viral vector** systems, Marek's disease and Fowlpox viruses expressing the vvIBDV host-protective antigen VP2 (rMDV, rFPV), were used. Most of chickens vaccinated with the rFPV or rMDV alone, or vaccinated simultaneously with both at their hatch (rMDV-rFPV1d), were protected against developing clinical signs and mortality; however, only zero to 14% of the chickens were protected against gross lesions. In contrast, gross lesions were protected in 67% of chickens vaccinated primarily with the rMDV followed by boosting with the rFPV 2 weeks later (rMDV-rFPV14d). Protection against the severe histopathological lesions of rFPV, rMDV, rMDV-rFPV1d, and rMDV-rFPV14d vaccine groups were 33, 42, 53, and 73%, respectively. Geometric mean antibody titers to VP2 of chickens vaccinated with the rFPV, rMDV, rMDV-rFPV1d, and rMDV-rFPV14d before the challenge were 110, 202, 254, and 611, respectively. Persistent infection of the rMDV in chickens after the booster vaccination with rFPV was suggested by detection of the rMDV genes from peripheral blood lymphocyte DNA at 28 weeks of age. These results indicate that the dual-**viral vector** approach is useful for quickly and safely inducing strong and long-lasting protective immunity against vvIBDV in chickens.

CONCEPT CODE:
Medical and clinical microbiology - Virology 36006
Genetics - General 03502
Pathology - General 12502
Poultry production - General and methods 27002
Genetics of bacteria and viruses 31500
Virology - Animal host viruses 33506
Immunology - Bacterial, viral and fungal 34504
Immunology - Immunopathology, tissue immunology 34508

INDEX TERMS:
Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Infection; Veterinary Medicine (Medical Sciences)

INDEX TERMS:
Methods & Equipment
dual **viral vectors**: molecular genetic method; vaccination: immunological method

INDEX TERMS:
Miscellaneous Descriptors
poultry industry; antiviral immunity; histopathology; persistent infections; protective immunity: long-lasting, strong

ORGANISM:
Classifier
Birnaviridae 03403
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
infectious bursal disease virus: pathogen
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

ORGANISM:
Classifier
Galliformes 85536

Super Taxa
Aves; Vertebrata; Chordata; Animalia
Organism Name
chicken: host
Taxa Notes
Animals, Birds, Chordates, Nonhuman Vertebrates, Vertebrates
ORGANISM: Classifier
Viruses 03000
Super Taxa
Microorganisms
Organism Name
animal viruses
Taxa Notes
Microorganisms, Viruses

L8 ANSWER 28 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2000:278925 BIOSIS
DOCUMENT NUMBER: PREV200000278925
TITLE: Enhancement of cancer cell death.
AUTHOR(S): Lau, Allan S. [Inventor, Reprint author]; Yeung, Michael C. [Inventor]
CORPORATE SOURCE: San Francisco, CA, USA
ASSIGNEE: The Regents of the University of California, Oakland, CA, USA
PATENT INFORMATION: US 5976800 November 02, 1999
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Nov. 2, 1999) Vol. 1228, No. 1. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Jul 2000
Last Updated on STN: 7 Jan 2002
ABSTRACT:The invention provides for methods and compositions based on the expression of cellular levels of **double-stranded** ***RNA*** dependent kinase (PKR), an interferon-regulated gene, is used to enhance cancer cell death. The PKR gene is encoded by vectors, optionally containing specific promoters that are activated only in specific target cells. Cells producing PKR are treated with non-toxic, low doses of apoptosis-inducing agents, such as TNF-alpha or poly I:C, leading to programmed cell death without the use of conventional chemotherapeutic agents. Designing of recombinant ***viral*** **vectors** for gene therapy based on these expression systems for the treatment of human hepatitis B and C viruses, human papilloma virus, and other cancers and viral diseases is also taught.
NAT. PATENT. CLASSIF.:435006000
CONCEPT CODE: General biology - Miscellaneous 00532
INDEX TERMS: Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Cell Biology; Methods and Techniques; Tumor Biology
INDEX TERMS: Chemicals & Biochemicals
PKR: **double-stranded RNA** dependent kinase, kinase; PKR gene
INDEX TERMS: Methods & Equipment
enhancement of cancer cell death: genetic method, therapeutic method

L8 ANSWER 29 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2000:97422 BIOSIS
DOCUMENT NUMBER: PREV200000097422

TITLE: Epidemic of blindness in kangaroos: Evidence of a viral aetiology.

AUTHOR(S): Hooper, P. T. [Reprint author]; Lunt, R. A. [Reprint author]; Gould, A. R. [Reprint author]; Hyatt, A. D. [Reprint author]; Russell, G. M. [Reprint author]; Kattenbelt, J. A. [Reprint author]; Blacksell, S. D. [Reprint author]; Reddacliff, L. A.; Kirkland, P. D.; Davis, R. J.; Durham, P. J. K.; Bishop, A. L.; Waddington, J.

CORPORATE SOURCE: CSIRO Australian Animal Health Laboratory, Geelong, VIC, 3220, Australia

SOURCE: Australian Veterinary Journal, (Aug., 1999) Vol. 77, No. 8, pp. 529-536. print.
CODEN: AUVJA2. ISSN: 0005-0423.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 15 Mar 2000
Last Updated on STN: 3 Jan 2002

ABSTRACT:Objective: To determine the cause of an epidemic of blindness in kangaroos. Design and procedures: Laboratory examinations were made of eyes and brains of a large number of kangaroos using serological, virological, histopathological, electron microscopical, immunohistochemical methods, and PCR with cDNA sequencing. In addition, potential insect **viral** ***vectors*** identified during the disease outbreak were examined for specific viral genomic sequences. Sample population: For histopathological analysis, 55 apparently blind and 18 apparently normal wild kangaroos and wallabies were obtained from New South Wales, Victoria, South Australia, and Western Australia. A total of 437 wild kangaroos and wallabies (including 23 animals with apparent blindness) were examined serologically. Results: Orbiviruses of the Wallal and Warrego serogroups were isolated from kangaroos affected with blindness in a major epidemic in south-eastern Australia in 1994 and 1995 and extending to Western Australia in 1995/96. Histopathological examinations showed severe degeneration and inflammation in the eyes, and mild inflammation in the brains. In affected retinas, Wallal virus antigen was detected by immunohistochemical analysis and orbiviruses were seen in electron microscopy. There was serological variation in the newly isolated Wallal virus from archival Wallal virus that had been isolated in northern Australia. There were also variations of up to 20% in genotype sequence from the reference archival virus. Polymerase chain reactions showed that Wallal virus was present during the epidemic in three species of midges, Culicoides austropalpalis, C dycei and C marksi. Wallal virus nucleic acid was also detected by PCR in a paraffin-embedded retina taken from a blind kangaroo in 1975. Conclusion: Wallal virus and perhaps also Warrego virus are the cause of the outbreak of blindness in kangaroos. Other viruses may also be involved, but the evidence in this paper indicates a variant of Wallal virus, an orbivirus transmitted by midges, has the strongest aetiological association, and immunohistochemical analysis implicates it as the most damaging factor in the affected eyes.

CONCEPT CODE: Medical and clinical microbiology - General and methods 36001
Microscopy - General and special techniques 01052
Pathology - Diagnostic 12504
Sense organs - General and methods 20001
Veterinary science - General and methods 38002
Genetics of bacteria and viruses 31500
Virology - General and methods 33502

INDEX TERMS: Major Concepts
Infection; Veterinary Medicine (Medical Sciences); Sense Organs (Sensory Reception)

INDEX TERMS: Diseases
blindness: eye disease, nervous system disease, epidemic, viral etiology

Blindness (MeSH)
INDEX TERMS: Diseases
retinitis: eye disease
Retinitis (MeSH)
INDEX TERMS: Diseases
viral chorioretinitis: eye disease, viral disease, experimental reproduction
ORGANISM: Classifier
Macropodidae 86075
Super Taxa
Marsupialia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
kangaroo
Taxa Notes
Animals, Chordates, Mammals, Marsupials, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates
ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
Wallal virus
Warrego virus
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

L8 ANSWER 30 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2000:99316 BIOSIS
DOCUMENT NUMBER: PREV200000099316
TITLE: A review of gene therapy for the treatment of central nervous system tumors.
AUTHOR(S): Qureshi, Nazer H.; Chiocca, E. Antonio [Reprint author]
CORPORATE SOURCE: Molecular Neuro-Oncology Laboratories and Brain Tumor Center, Massachusetts General Hospital, 13th Street, Bldg. No. 149, East Charlestown, MA, 02129, USA
SOURCE: Critical Reviews in Oncogenesis, (1999) Vol. 10, No. 4, pp. 261-274. print.
CODEN: CRONEI. ISSN: 0893-9675.
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Mar 2000
Last Updated on STN: 3 Jan 2002
CONCEPT CODE: Genetics - Human 03508
Nervous system - General and methods 20501
Neoplasms - General 24002
INDEX TERMS: Major Concepts
Genetics; Methods and Techniques
INDEX TERMS: Parts, Structures, & Systems of Organisms
central nervous system: nervous system
INDEX TERMS: Diseases
brain tumors: neoplastic disease, nervous system disease
Brain Neoplasms (MeSH)
INDEX TERMS: Methods & Equipment
gene therapy: gene therapy method, recombinant gene expression applications
INDEX TERMS: Miscellaneous Descriptors
nonviral vectors; retroviral vectors; **viral vectors**
ORGANISM: Classifier

Adenoviridae 03116
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
adenovirus
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Herpesviridae 03115
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
herpes simplex virus
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

ORGANISM: Classifier
Parvoviridae 03205
Super Taxa
ssDNA Viruses; Viruses; Microorganisms
Organism Name
adeno-associated virus
Taxa Notes
Single-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Retroviridae 03305
Super Taxa
DNA and RNA Reverse Transcribing Viruses; Viruses; Microorganisms
Organism Name
retrovirus
Taxa Notes
DNA and RNA Reverse Transcribing Viruses, Microorganisms, Viruses

L8 ANSWER 31 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1998:504267 BIOSIS
DOCUMENT NUMBER: PREV199800504267
TITLE: The P2 protein of rice dwarf phytoreovirus is required for adsorption of the virus to cells of the insect vector.
AUTHOR(S): Omura, Toshihiro [Reprint author]; Yan, Jin; Zhong, Boxiong; Wada, Masato; Zhu, Yafeng; Tomaru, Masatoshi; Maruyama, Wakako; Kikuchi, Akira; Watanabe, Yasuo; Imura, Ikuo; Hibino, Hiroyuki

CORPORATE SOURCE: Natl. Agric. Res. Cent., Tsukuba, Ibaraki 305, Japan
SOURCE: Journal of Virology, (Nov., 1998) Vol. 72, No. 11, pp. 9370-9373. print.
CODEN: JOVIAM. ISSN: 0022-538X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 18 Nov 1998
Last Updated on STN: 18 Nov 1998

ABSTRACT:Intact particles of rice dwarf phytoreovirus adsorbed to and entered monolayer-cultured cells of the insect vector Nephotettix cincticeps and multiplied within the cells. Particles that lacked the P2 protein neither attached to nor infected such cells. Furthermore, P2-free particles obtained from a transmission-competent isolate of the virus were unable to infect insect vectors that had been allowed to feed on these virus particles through a membrane. However, when such virus particles were injected into insects via a glass capillary tube they successfully infected the insects, which became able to transmit the virus. These results support the hypothesis that, while P2-free particles can neither interact with nor infect cells in the intestinal tract of the insect vector, they do retain the ability to infect such cells when physically introduced into the hemolymph by injection.

CONCEPT CODE: Virology - Plant host viruses 33508
Biochemistry studies - Proteins, peptides and amino acids 10064
Biophysics - Molecular properties and macromolecules 10506

INDEX TERMS: Major Concepts
Biochemistry and Molecular Biophysics; Virology
INDEX TERMS: Chemicals & Biochemicals
P2 protein
INDEX TERMS: Miscellaneous Descriptors
viral adsorption; viral transmission
ORGANISM: Classifier
Homoptera 75324
Super Taxa
Insecta; Arthropoda; Invertebrata; Animalia
Organism Name
Nephotettix-cincticeps: viral vector
Taxa Notes
Animals, Arthropods, Insects, Invertebrates
ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
rice dwarf phytoreovirus: pathogen
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

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on STN DUPLICATE 12
ACCESSION NUMBER: 97152219 EMBASE
DOCUMENT NUMBER: 1997152219
TITLE: Baculovirus multigene expression vectors and their use for understanding the assembly process of architecturally complex virus particles.
AUTHOR: Roy P.; Mikhailov M.; Bishop D.H.L.
CORPORATE SOURCE: P. Roy, NERC Institute, Virology Environmental Microbiology, Mansfield Road, Oxford OX1 3SR, United Kingdom. POR@mail.nerc-oxford.ac.uk
SOURCE: Gene, (1997) 190/1 (119-129).
Refs: 32

ISSN: 0378-1119 CODEN: GENED6
PUBLISHER IDENT.: S 0378-1119(96)00619-1
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 004 Microbiology
027 Biophysics, Bioengineering and Medical Instrumentation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:
The baculovirus expression vector is a eukaryotic DNA **viral** ***vector*** for the cloning and expression of foreign genes in cultured lepidopteran insect cells and insects. It has become an important tool for the large-scale production of recombinant proteins for a variety of applications including the structure-function analysis of genes and their gene products. We have developed a number of baculovirus multigene expression vectors and utilized these to understand the assembly process of multicomponent capsid structures of large viruses such as bluetongue virus (BTV), a member of the Orbivirus genus within the family Reoviridae. BTV is some 810 Å in diameter and comprised of two protein shells containing four major proteins, VP2, VP5, VP7 and VP3, surrounding a genome of ten **double-stranded** ***RNA*** segments and three minor proteins (VP2, VP4 and VP6). BTV is the etiological agent of a sheep disease that is sometimes fatal in certain parts of the world (e.g., Africa, Asia, and the Americas). Using baculovirus multigene vectors, we have co-expressed various combinations of BTV genes in insect cells and produced structures that mimic the various stages of BTV assembly. For example, co-expressed VP3 and VP7 form BTV core-like particles, while co-expressed VP2, VP5, VP7 and VP3 form BTV virus-like particles. Using deletion, point and domain switching analyses of each protein, we have been able to identify certain sequences in the VP7 and VP3 proteins that are essential for the assembly of core-like particles. These expression and biochemical studies have been complemented by collaboration studies using cryo-electron microscopy and image processing analyses to provide the three-dimensional structure of the expressed particles. In addition and with other associates, we have used X-ray crystallography of VP7 to deduce its atomic structure. Extensive studies on the immune responses elicited by these self-assembled particles, and chimeric derivatives involving various foreign antigens, have been carried out. Finally, using as little as 10 μg of the self-assembled virus-like particles, we have shown that they can confer long-lasting protection in sheep against BTV.

CONTROLLED TERM: Medical Descriptors:
*expression vector
*multigene family
*protein assembly
*virus particle
baculovirus
bluetongue orbivirus
conference paper
controlled study
cryoelectron microscopy
gene deletion
gene expression
gene function
gene insertion
gene structure
genome
image processing
immune response
lepidoptera
molecular cloning

nonhuman
priority journal
protein structure
protein synthesis
sheep disease
structure activity relation
virion
virus vector
X ray crystallography
Drug Descriptors:
*virus protein: EC, endogenous compound
capsid protein: EC, endogenous compound
chimeric protein: EC, endogenous compound
double stranded rna: EC, endogenous compound
recombinant protein: EC, endogenous compound

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on STN DUPLICATE 13

ACCESSION NUMBER: 95255578 EMBASE
DOCUMENT NUMBER: 1995255578
TITLE: Virus-mediated expression of firefly luciferase in the parasitic protozoan Giardia lamblia.
AUTHOR: Yu D.-C.; Wang A.L.; Wu C.-H.; Wang C.C.
CORPORATE SOURCE: Dept. of Pharmaceutical Chemistry, School of Pharmacy, University of California, P.O. Box 0446,San Francisco, CA 94143-0446, United States
SOURCE: Molecular and Cellular Biology, (1995) 15/9 (4867-4872).
ISSN: 0270-7306 CODEN: MCEBD4
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT:

Giardia lamblia, a prevalent human pathogen and one of the lineages that branched earliest from prokaryotes, can be infected with a double-***stranded*** **RNA** virus, giardiavirus (GLV). The 6,277-bp viral genome has been previously cloned (A.L. Wang, H.-M. Yang, K.A. Shen, and C.C. Wang, Proc. Natl. Acad. Sci. USA 90:8595-8599, 1993; C.-H. Wu, C.C. Wang, H.M. Yang, and A.L. Wang, Gene, in press) and was converted to a transfection vector for G. lamblia in the present study. By flanking the firefly luciferase gene with the 5' and 3' untranslated regions (UTRs) of the GLV genome, transcript of the construct was synthesized in vitro with T7 polymerase and used to transfect G. lamblia WB trophozoites already infected with GLV (WBI). Optimal electroporation conditions used for the transfection were set at 1,000 V/cm and 500 μF, which resulted in expression of significant luciferase activity up to 120 h after electroporation. Furthermore, the mRNA and the antisense RNA of the luciferase gene were both detected by reverse transcription and PCR from 6 to 120 h postelectroporation, whereas no antisense RNA of luciferase was observed in the electroporated virus-free Giardia WB trophozoites. The mRNA of luciferase was detectable in the virus-free trophozoites by reverse transcription and PCR only up to 20 h after the electroporation, indicating that the introduced mRNA was replicated only by the viral RNA-dependent RNA polymerase inside the WBI cells. This expression of luciferase was dependent on the presence of UTRs on both ends of the viral genome transcript, including a putative packaging site that was apparently indispensable for luciferase expression. This is the first time that a **viral vector** in the form of mRNA UTRs has been successfully used in transfecting a protozoan.

CONTROLLED TERM: Medical Descriptors:
*gene expression

*genetic transcription
*genetic transfection
*virus vector
article
gene construct
giardia lamblia
nonhuman
priority journal
protozoon
trophozoite
Drug Descriptors:
*luciferase: EC, endogenous compound
*messenger rna
*rna polymerase

CAS REGISTRY NO.: (luciferase) 61970-00-1, 9014-00-0; (rna polymerase) 9014-24-8

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ACCESSION NUMBER: 1996:293260 BIOSIS
DOCUMENT NUMBER: PREV199699015616
TITLE: Dynamics of viral mRNA translation: Identification of ribosome pause sites by primer extension inhibition.
AUTHOR(S): Samuel, Charles E. [Reprint author]; Doohan, James P.
CORPORATE SOURCE: Dep. Biol. Sci., Univ. Calif. at Santa Barbara, Santa Barbara, CA 93106, USA
SOURCE: Adolph, K. W. [Editor]. Methods in Molecular Genetics, (1994) pp. 195-215. Methods in Molecular Genetics; Molecular virology techniques, Part A.
Publisher: Academic Press, Inc., 1250 Sixth Ave., San Diego, California 92101, USA; Academic Press Ltd., 14 Belgrave Square, 24-28 Oval Road, London NW1 70X, England, UK. Series: Methods in Molecular Genetics.
ISSN: 1067-2389. ISBN: 0-12-044306-6.
DOCUMENT TYPE: Book
Book; (Book Chapter)
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Jul 1996
Last Updated on STN: 2 Jul 1996
CONCEPT CODE: Cytology - General 02502
Cytology - Animal 02506
Genetics - General 03502
Biochemistry methods - Nucleic acids, purines and pyrimidines 10052
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Biochemistry studies - Proteins, peptides and amino acids 10064
Replication, transcription, translation 10300
Biophysics - Methods and techniques 10504
Metabolism - Proteins, peptides and amino acids 13012
Genetics of bacteria and viruses 31500
Microbiological apparatus, methods and media 32000
Virology - Animal host viruses 33506
INDEX TERMS: Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Genetics; Metabolism; Methods and Techniques; Microbiology; Molecular Genetics (Biochemistry and Molecular Biophysics)
INDEX TERMS: Chemicals & Biochemicals

POLYACRYLAMIDE

INDEX TERMS: Miscellaneous Descriptors
ANALYTICAL METHOD; ANIMAL CELL; BOOK CHAPTER; CELL-FREE PROTEIN SYNTHESIS SYSTEM; COMPLEMENTARY DNA; POLYACRYLAMIDE GEL ELECTROPHORESIS; VIRAL MESSENGER RNA; **VIRAL VECTOR** CELL TRANSFECTION

ORGANISM: Classifier
Animalia 33000
Super Taxa
Animalia
Organism Name
Animalia
Taxa Notes
Animals

ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
reovirus
Reoviridae
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

REGISTRY NUMBER: 9003-05-8 (POLYACRYLAMIDE)

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ACCESSION NUMBER: 1994:18175 BIOSIS
DOCUMENT NUMBER: PREV199497031175
TITLE: Recombinant fowlpox virus vaccines for poultry.
AUTHOR(S): Boyle, D. B. [Reprint author]; Heine, H. G.
CORPORATE SOURCE: CSIRO, Div. Animal Health, Aust. Animal Health Lab., P.O. Bag 24, Geelong, VIC 3220, Australia
SOURCE: Immunology and Cell Biology, (1993) Vol. 71, No. 5, pp. 391-397.
CODEN: ICBIEZ. ISSN: 0818-9641.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 25 Jan 1994
Last Updated on STN: 25 Jan 1994

ABSTRACT:The intensive poultry industries rely heavily upon the use of vaccines for disease control. **Viral vector** based vaccines offer new avenues for the development of vaccines for effective disease control in poultry. Techniques developed for the construction of recombinant vaccinia viruses have been readily adapted to the construction of recombinant viruses based on fowlpox virus (rFPV). The ability to insert several genes into the large genome of fowlpox may enable the development of multivalent vaccines and vaccines incorporating immune response modifiers such as lymphokines. Newcastle disease, avian influenza, infectious bursal disease and Marek's disease antigens expressed by rFPV have been shown to be effective vaccines in poultry. None appear, however, to provide a substantial improvement in vaccine efficacy. Recombinant FPV will be a valuable adjunct to conventional vaccines currently in widespread use. Whether rFPV or other vector based vaccines can circumvent the problems of vaccination in the presence of high maternally derived antibodies is yet to be resolved. The observation that avipoxvirus recombinants may be suitable for the vaccination of non-avian species provides an added dimension to vaccines based on FPV or other avipoxviruses. Recombinant FPV will be a valuable adjunct to conventional vaccines currently in widespread use. Whether rFPV or other find a useful role in poultry disease control when used in conjunction with conventional vaccines.

CONCEPT CODE: Blood - Blood, lymphatic and reticuloendothelial

pathologies 15006
Blood - Lymphatic tissue and reticuloendothelial system 15008
Respiratory system - Pathology 16006
Pharmacology - Immunological processes and allergy 22018
Neoplasms - Immunology 24003
Neoplasms - Blood and reticuloendothelial neoplasms 24010
Genetics of bacteria and viruses 31500
Virology - Animal host viruses 33506
Immunology - Bacterial, viral and fungal 34504
Medical and clinical microbiology - Virology 36006
Veterinary science - Pathology 38004
Veterinary science - Microbiology 38006

INDEX TERMS: Major Concepts
Genetics; Immune System (Chemical Coordination and Homeostasis); Infection; Microbiology; Pharmacology; Veterinary Medicine (Medical Sciences)

INDEX TERMS: Miscellaneous Descriptors
AVIAN INFLUENZA VIRUS; BIOTECHNOLOGY; GENETIC ENGINEERING

ORGANISM: Classifier
Aves 85500
Super Taxa
Vertebrata; Chordata; Animalia
Organism Name
Aves
Taxa Notes
Animals, Birds, Chordates, Nonhuman Vertebrates, Vertebrates

ORGANISM: Classifier
Birnaviridae 03403
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Organism Name
infectious bursal disease virus
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Herpesviridae 03115
Super Taxa
dsDNA Viruses; Viruses; Microorganisms
Organism Name
Marek's disease virus
Taxa Notes
Double-Stranded DNA Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Orthomyxoviridae 03505
Super Taxa
Negative Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
Orthomyxoviridae
Taxa Notes
Microorganisms, Negative Sense Single-Stranded RNA Viruses, Viruses

ORGANISM: Classifier
Paramyxoviridae 03503
Super Taxa
Negative Sense ssRNA Viruses; Viruses; Microorganisms
Organism Name
Newcastle disease virus
Taxa Notes

Microorganisms, Negative Sense Single-Stranded RNA Viruses, Viruses

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ACCESSION NUMBER: 1992:211576 BIOSIS
DOCUMENT NUMBER: PREV199293111801; BA93:111801
TITLE: VACCINIA-ROTAVIRUS VP7 RECOMBINANTS PROTECT MICE AGAINST ROTAVIRUS-INDUCED DIARRHOEA.
AUTHOR(S): ANDREW M E [Reprint author]; BOYLE D B; COUPAR B E H; REDDY D; BELLAMY A R; BOTH G W
CORPORATE SOURCE: CSIRO AUSTRALIAN ANIMAL HEALTH LAB, PO BAG 24, GEELONG, VIC 3220, AUSTRALIA
SOURCE: Vaccine, (1992) Vol. 10, No. 3, pp. 185-191.
CODEN: VACCDE. ISSN: 0264-410X.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 4 May 1992
Last Updated on STN: 4 May 1992

ABSTRACT:Recombinant vaccinia viruses expressing wild type intracellular VP7 (VP7wt) from rotavirus SA11 or VP7sc, a cell surface-anchored variant, boosted antibody titres in SA11-immune mice. Pups born to these mice were protected from diarrhoea following challenge with SA11. In rotavirus-naive mice, two immunizations with recombinant vaccinia virus expressing VP7sc stimulated protective immunity that could be transferred to pups, whereas viruses expressing VP7wt did not stimulate protective immunity. Recombinant vaccinia viruses expressing intracellular or cell surface-anchored VP6, the rotavirus group-reactive antigen from the inner capsid, did not stimulate protective immunity. These experiments demonstrate that a live **viral** ***vector*** expressing cell surface anchored VP7 may represent a strategy for the development of safe, effective vaccines against rotavirus-induced diarrhoea.

CONCEPT CODE:
Biochemistry studies - General 10060
Pathology - Therapy 12512
Digestive system - Pathology 14006
Pharmacology - Immunological processes and allergy 22018
Laboratory animals - General 28002
Immunology - Bacterial, viral and fungal 34504
Medical and clinical microbiology - Virology 36006

INDEX TERMS:
Major Concepts
Gastroenterology (Human Medicine, Medical Sciences); Immune System (Chemical Coordination and Homeostasis); Infection; Pharmacology

INDEX TERMS:
Miscellaneous Descriptors
DIARRHEA ANIMAL MODEL

ORGANISM:
Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Taxa Notes
Double-Stranded RNA Viruses, Microorganisms, Viruses

ORGANISM:
Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

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ACCESSION NUMBER: 1988:402069 BIOSIS
DOCUMENT NUMBER: PREV198886074708; BA86:74708
TITLE: EXPERIMENTAL STUDY ON BITING TRANS-STADIAL AND TRANSOVARIAN TRANSMISSION OF EPIDEMIC HEMORRHAGIC FEVER VIRUS BY GAMASID MITES.
AUTHOR(S): ZHUGE H X [Reprint author]; ET AL
CORPORATE SOURCE: DEP PARASITOLOGY SUZHOU MED COLL
SOURCE: Chinese Journal of Epidemiology, (1987) Vol. 8, No. 6, pp. 336-339.
ISSN: 0254-6450.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: CHINESE
ENTRY DATE: Entered STN: 7 Sep 1988
Last Updated on STN: 7 Sep 1988

ABSTRACT:The identified EHFV strain Su-163 was firstly inoculated into suckling mice. Then let nymphs and adults of gamasid mites (Ornithonyssus bacoti) bite the infected mice. On the 10th, 15th and 25th days, let these mites and their 2nd generation protonymph bite healthy suckling mice. The EHF antigen was tested with indirect immunofluorescent technique. It was shown that the specific fluorescence granules were detected in all of them except the group of 2nd generation protonymph on the 10th day, while in the control and suckling mice, the reovirus types I, II were all negative and that the specific fluorescence reaction could be blocked by EHFV immuno-serum. Thus, we, for the first time, provided evidence that O. bacoti could transmit EHFV not only by biting, but also by trans-stadial and transovarian. The virus could survive in the mites for at least 25 days. As O. bacoti is the predominant species on rats and mice, widely in distribution, large in number, and exclusively hemophilic, and its seasonal fluctuation is in conforming with the incidence of human EHF, we consider that it may possibly be the vector and reservoir of both urban and laboratory animal types of EHF.

CONCEPT CODE:
Ecology: environmental biology - Animal 07508
Reproductive system - Physiology and biochemistry 16504
Integumentary system - General and methods 18501
Integumentary system - Pathology 18506
Virology - Animal host viruses 33506
Medical and clinical microbiology - Virology 36006
Public health: epidemiology - Communicable diseases 37052
Public health: disease vectors - Animate 37058
Economic entomology - Animal pests 60012
Parasitology - General 60502
Invertebrata: comparative, experimental morphology, physiology and pathology - Arthropoda: chelicerata 64060

INDEX TERMS: Major Concepts
Dermatology (Human Medicine, Medical Sciences); Infection; Integumentary System (Chemical Coordination and Homeostasis); Microbiology; Parasitology; Physiology; Reproductive System (Reproduction); Vector Biology

INDEX TERMS: Miscellaneous Descriptors
MICE HUMAN ORNITHONYSSUS-BACOTI NYMPHS PROTONYMPHS **VIRAL VECTOR** VIRUS RESERVOIR

ORGANISM: Classifier
Reoviridae 03402
Super Taxa
dsRNA Viruses; Viruses; Microorganisms
Taxa Notes
Double-Stranded RNA
Viruses, Microorganisms, Viruses

ORGANISM: Classifier
Acarina 75403

Super Taxa
Chelicerata; Arthropoda; Invertebrata; Animalia
Taxa Notes
Animals, Arthropods, Chelicerates, Invertebrates

ORGANISM:
Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

ORGANISM:
Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates